WESTEPN FARMER & GARDENER.

"THE PROFIT OF THE EARTH IS FOR ALL; THE KING HIMSELF IS SERVED BY THE FIELD."—*Eccles* 5-9.

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COMMUNICATIONS.

GRAFTING.

In *Nicholson's* "Farmers' Assistant," published in 1818, the following method of *grafting* is described, which it may be well enough to republish. I succeeded with a scion of a pear on an apple tree, as late as the 16th June; and I have no doubt, that for large trees, it would be preferable to the ordinary method. I. S.

Greene County, Ohio, Oct. 18, 1847.

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"GRAFTING IN THE RIND, is performed by cutting off the stock square, slitting down the bark a small distance, and raising it up, so that the end of the scion may be inserted between it and the wood: The scion is made with a shoulder, cut in about half its thickness, and the other half is sloped off gradually, so as to give it the form of a wedge; the cut side being flat and the bark side untouched. This wedge, or tongue, is inserted under the bark, with the shoulder fitted to the stock; the bark is then pressed close and bound round and the plaster is applied," as in other cases. "It is usual in this case to insert three, or four scions in one stock."

SELECTIONS.

BREEDING HORSES—NO. 5.

In selecting a stallion or mare for breeding, the first object should be to see that they possess the requisites, individually, which are desired in the stock to be bred; next, to obtain a knowledge of their progenitors; because, on the principle that "like begets like," defects as well as excellencies are transmitted by parents to their offspring. Hereditary defects are not always apparent—that is, they sometimes lie dormant for one generation or more, and then break out. Before animals have produced progeny, the best evidence of what their progeny will be, is what their ancestors have been, because there is a tendency to "breed back." Animals of the same blood, however, are not equally valuable as breeders; hence the surest evidence of the value of a breeding animal, is the character of the stock it produces. Thus the value of pedigree consists in affording, in advance, an *indication* of the value of an animal as a breeder, but the character of the offspring and descendants may be regarded as exhibiting the *degree* of value it possesses—the one may be regarded as *prima facia* evidence, the other as demonstrative.

The mare should possess, as the first and most important requisite, a good constitution and healthy habit. She should be free from diseases, both of a hereditary and incidental nature. Her form should be that which denotes strength, energy and endurance. She should possess an intelligent and tractable disposition—qualities which add value in many respects. They render animals more safe and trust-worthy in all situations, enable them to perform their work in a manner more easy to themselves, and more agreeable to their drivers. In fact, such a disposition amounts to an actual saving in the wear of the animal machine, and insures its longer duration.

The stallion should possess the form and requisites necessary in the breed or variety to which he belongs, in the greatest practicable degree. In regard to form, Mr. Youatt has well described what is deemed the most important point.—"If there be," says he, "one point which we should say is absolutely essential, it is *compactness*—as much goodness and strength as possible condensed in a little space."

A capacious chest—not too wide—in a roadster or carriage horse, but deep and rounding, is an essential point, both in the stallion and mare. A large chest gives room for large lungs, which are absolutely necessary to give *wind* to the horse. The blood must flow through the lungs, and there part with a portion of its carbon, and receive in its place a due quantity of oxygen. This is essential to life. In rapid exercise, respiration is quickened, a greater quantity of blood is sent to the lungs in the same time, than when the animal was at rest. Unless there is room for this, and for the free action of the lungs under this pressure of blood, the process of oxydation will not be properly performed, the circulation of the blood will be checked, respiration will be impeded, and the animal may die of suffocation. A horse with small lungs cannot long bear violent exertion; hence, as Mr. Youatt observes, when speaking of the hunter—"the majority of horses that perish in the field, are narrow chested."

The head should be rather small, neatly turned, and broad across the forehead; the face straight, and lean from the eyes downward; the nostrils large and expansive; the jaws well rounded with full, strong muscles. This latter point indicates that the animal has a firm, muscular system, and horses which have it, grind their food more thoroughly when they become old, and do not show old age as soon as those whose jaws are lank and thin. The eye should be full and bright, the ear thin and upright.

The shoulders should be oblique, and well laid in at the top. It may be safely asserted that no good roadster was ever known with upright shoulders. The legs below the knee and hock should be clean, the bone flat, the sinews large and prominent, making the shank wide. The knee and hock should be low, or well "let down;" the fore-arm and thigh large and muscular; the hock wide, free from lumps or kernels, and the cord above should run a good distance from the tibia or lower bone of the thigh.

Did time and space permit, the advantages of all these points might be shown on mechanicel principles. There are many other points which should be regarded in selecting horses for breeding, but the above may be considered the most important, and the present is not the proper occasion for going more into detail. As before remarked, it should be the aim to procure animals which are as perfect as possible in their outward form and internal structure, because on this obviously depends their ability to perform what we require; but with all our attention in this respect, disappointment may sometimes arise. Some animals may, as regards mechanical conformation, be free from defect, and yet be greatly lacking in the power of locomotion. The tangible parts of the machine may be right, and their combination apparently perfect, but the *nervous energy*—that invisible, imponderable fluid, necessary to it proper movements, may be wanting. This vital or nervous energy is, perhaps, better indicated by the animal's eye than by any other organ. Indeed, the eye may be regarded as the index to the general character in all cases. If this is full and bright, giving to

the animal a spirited and lively air, with an expression of intelligence, he will not often be deficient in nervous energy. But the safest test will be an actual trial under the saddle or in harness.

It has been remarked that it may be necessary to breed a stock or family of horses considerably within itself, in order to establish characteristics. Some may object that this would be breeding from too close affinities. A dissertation on *in-and in* breeding will not here be attempted; whatever may be the advantages or disadvantages of that system, the course advised has no special connection with it. In this country, it is seldom or never the case that many horses can be found of precisely the same blood. A single stallion often begets, with the common mares of the country, a numerous progeny. Having had a common sire, *one-half* of the blood of this stock would of course be the same; but as the blood of no two of the dams, perhaps, was alike, there will necessarily be in the offspring an indefinite variation. The breeding of such a stock together could not be called in-and in. Those individuals should be chosen as breeders which in points and qualities approach nearest to the standard that has been adopted. So long as this rule is strictly followed, and none but animals of strong constitution are allowed to propagate, no danger need be apprehended from such an affinity of blood as has been spoken of.

It is not, however, in all cases expedient to confine the selection of breeders to one family. On the contrary, a change is advisable whenever an animal equally as well bred and of superior points can be obtained; but the selection should always be made from a stock which in its general characteristics closely resembles the one which has before been bred from, otherwise the change may defeat the object desired, by breaking up the tendency of the stock to assimilate a common standard. With breeds that are already established, the course advised by Mr. Youatt, is undoubtedly the true one, viz: —that "the most perfect of the *same breed* should be selected, but varied by being taken from different stocks."

The mare is capable of breeding at two years old, and will generally continue to breed till she is twenty. Some individuals of remarkably strong constitutions have been known to rear foals at the age of thirty. But the best period for breeding may be said to be from the fifth to the fifteenth year. In proportion to the strength and vigor of the mare, will generally be the value of the foal. She should be supplied with abundance of wholesome food during pregnancy and while she is suckling. She should not be overworked at any time, but with proper care may perform light labor about the farm up to the time of foaling.

Breeding mares may be kept during winter at little expense, provided they are sheltered and fed with care. If they are exercised by work every day, they will only need a good stall, well littered at night. If not worked, they should have a yard attached to their stable, or to which they may be taken, where they can have air and exercise. They should not run in yards with horned cattle, because the cattle are liable to gore them. Their food may be hay, or hay and straw cut and mixed together with some shorts, or two or three quarts of corn and cob meal daily. While they are in the yards, they may pick over corn fodder and coarse hay or straw. Potatoes or carrots at the rate of a peck per day, will keep the bowels in good order, and improve their general health and appearance. If the vegetables are given, the shorts and meal may be omitted, though the latter may be preferable if the mare is worked much.

It is better that the mares should not foal till they go to pasture. They are less liable to accidents when running at large, and the grass will generally give a better flow of milk than [illegible] they will receive in the stable. A shel- [illegible] d be provided till the weather has become [illegible] oal is three or four weeks old, it is advi- [illegible] should be used but very little. After [illegible] be put to very light and slow draught; [illegible] not be heated, as this would affect the [illegible] nd might occasion the foal much in- [illegible]

[illegible] r five months, the foal should be tak- [illegible] veaned. It will be best to put it in [illegible] e it can neither see the day nor annoy her by its noise. It should be fed with sweet grass, or bright clover hay, or rowen, with a few oats or potatoes or carrots. This kind of food should be continued through the first winter, and till the animal can be turned to grass the next season. Nothing is more essential to the proper development of the natural characteristics, than liberal feeding, (not *pampering*,) and good care for the first year. It is not recommended to give them a large quantity of grain—that may be too stimulating—but a pint to a quart of oats per day, with from half a peck to a peck of carrots or potatoes, and as much good hay as they will eat during the time they are kept up, will be amply paid for in the growth and condition of the animal. During the summer they will require nothing but grass.

After the first winter they will bear ruffer usage and coarser fare. An open shed, facing to the sun, will answer for shelter. They can eat some straw, corn-fodder, and inferior hay, while the weather is cold and their appetites are sharp; but a daily allowance of vegetables will serve to keep up their growth, and may be given to advantage.

They should be early accustomed to the halter and bridle. During the first winter they should be frequently led out, and be taught to go forward and stop at the proper word. They should be used with constant kindness—gently patted with the hand about the head and neck—their legs handled and their feet lifted. Treatment of this sort, commenced when the animal is young, will almost insure a docile and tractable horse; and where proper attention is paid to his education and training, his attachment to man is scarcely less than that of the dog.

The horse may be put to moderate work at four years old, but as his frame does not become fully matured and settled together until he is seven, he should not be subjected to constant and hard labor, till he has passed that age. It has been repeatedly observed that our best and most durable horses have been very carefully used while they were young, and our fast trotters have generally made their best time after they were ten years old. A good horse will work till he is twenty, provided the driver is at all times duly impressed with the important truth contained in the proverb—"A merciful man is merciful to his beast."

The horse is somewhat more subject to diseases than most of our domestic animals, though it may be safely asserted that a large proportion of them arise from ill usage. It is not my present purpose, however, to speak particularly in regard to this subject, but would recommend Mr. Youatt's excellent work entitled "The Horse," as containing the fullest, plainest, and best directions for the treatment of this animal under all circumstances.

In concluding these articles, the writer would with great earnestness enjoin upon the breeders of horses, the importance of producing *the best*. The cost of rearing horses, which at four years old will bring on an average from $100 to $150, is no greater than that of rearing those which will only bring half of those sums, and in some instances it would not be as much, for it is a fact that the best stocks are the least liable to disease and accidents. Breeding poor horses—such as have neither strength nor stamina to fit them for any *useful* business, always has been and will be attended with loss; while those *really* valuable will afford a remunerating profit. *Alb. Cult.* EQUUS.

BREEDING AND FATTENING CATTLE.

Science means that knowledge, not only of the details of a business or profession, which enables us to practice it as an art, but that intimate knowledge of all the reasons upon which each particular proceeding in the art is founded, which will enable us to take advantage of unexpected circumstances, and to originate, when it is desired, new modes of proceeding in particular cases. It is a knowledge of principles instead of details.

The advantages of science in the rearing and fattening of cattle, though not much thought of by many who follow the business, are not exceeded by those in any other department of agricultural pursuit. As proof of this we find it stated in the Herd Book, a work by L. F. Allen, Esq., that in 1710 the average weight of beef cattle at the Smithfield market in London was but 370 lbs. each.

"A select committee of the House of Commons, in a re-

port printed in 1795, stated that since the year 1732 their neat cattle, on an average had increased in size and weight 25 per cent. This would make the average at that time (1795) 462 pounds. The average age of fatted cattle was formerly about five years. At this last period, the peculiar state of the times in Great Britain, and indeed in all Europe, for the French Revolution had now stirred up the political chauldron of nearly all Christendom,) was exciting increased attention to agricultural pursuits, and the spirit of improvement in their herds of neat cattle, had spread through England and Scotland, to a wide extent, and probably no period of time ever witnessed a more rapid dissemination of valuable material for promoting the increased excellence in this variety of domestic adimals, than the thirty years succeeding that period. We are not surprised, therefore, at finding, according to the same authority, the average of the Smithfield cattle in 1830 at 656 pounds each — an increase, in 25 years, of over 40 per cent. — an astonishing contrast; and when it is understood that these last were fitted for the market at an average of four years of age instead of five, and probably with a lessened consumption of one year of forage, and a slightly increased expense of annual preparation for market per head, the additional profitable results are enormous. So much for improvement in England where their efforts in all branches of agriculture are still advancing with undiminished vigor."—*Southern Plant.*

AGRICULTURAL EDUCATION---SCHOOLS.

We copy the following article from the Prairie Farmer, a monthly publication issued at Chicago, Illinois. There is more common sense in it on this subject of agricultural education than we find in ordinary papers, and we hope our rich men who feel willing to bestow something in the way of encouragement to agriculture, will give it an attentive perusal. The Farmer says:

"For several years, many of our newspapers and agricultural clubs have had much to say of the establishment of agricultural schools, and in one or two instances have thrown themselves upon the subject as a sort of hobby. We have rather stood aloof from the discussion, because we have not very clearly seen the aim at which they were driving, and have been under the impression that those who were most eager in the business, did not themselves see their way with entire plainness.

If we have understood the ideas generally put forth, they have been to set up single schools, in which agriculture, theoretical and practical, should be the whole study. The models for these schools are to be found in Great Britain, or on the continent of Europe. If this be the object aimed at, we are free to say, that we regard the plan with little favor. Nothing, it seems to us, could sooner put such a conceit out of the heads of Americans, than the perusal of Mr. Colman's account of these schools. The idea of making a man a farmer, and so educating him that he *can be nothing else*, may do for that country; but it will never do here.

The facility with which men here change their occupations, though productive of some evils, and many times abused, is a peculiarity belonging to our country, which it is not desirable to change, until there is less change in other things. In England, a man works all his life at one branch of business; and if he is thrown out of that, he is as helpless as a child of ten years. We do not desire to see men thus educated here, whether the education be agricultural or in anything else. The duties of an American citizen require that he shall possess a fair knowledge of a great many things. Particular and thorough knowledge of one kind, and no knowledge of anything else, may give him power in that direction; but it exposes the individual and society to perils which ought not to be risked. We do not want lawyers who know nothing but law; nor ministers of the gospel who no nothing but theology; nor physicians who know nothing but physic. Their chief force may and ought to be expended in the line of their professions; but they must be properly instructed in other departments of knowledge, that the mind and character may be balanced; otherwise they may become dangerous members of society, if by any chance they are thrown out of their sphere. Nor do we want farmers to be educated to know nothing but farming. What is wanted of all professions and pursuits is, that they know *one thing intimately, and othere well.*

Our system of education has hitherto been mainly right. It has been to teach children the principles of things, to instruct them in the art of thinking. Hence in our higher schools and colleges, the aim is not so much to perfect the student in the minutiæ of a single branch of knowledge, or to impart a *great amount* of knowledge, as to instruct him in the elements of many branches, and qualify him to go forward himself, in any direction he pleases, after he leaves the institution. In short, the object is to enable the student to educate himself. Foreigners often amuse themselves at the number of studies to which our pupils attend; and some among us declaim about it, mainly because it differs from the plans of other countries; but we maintain, that though not free from evils, the *plan* is right, and adapted to our circumstances; and that it would be folly to substitute for it any other.

It is possible that we do not do full justice to the views of those of whom we speak; but that their plan is to establish what may be called agricultural *colleges* — institutions to which young men may repair after finishing the ordinary routine of studies, for the study of agriculture, both as an art and a science — something like our law and medical schools. If this be the plan, we are not prepared to say but that it may, at some future time, be plainly developed by the failure of all such projects for years to come.

An obstacle, sufficient to defeat this plan is, that the *science of* agriculture is not yet sufficiently perfect to stand by itself as a system of universal instruction. Its truths are often too much in the dark to be taught to young men, as scientific truihs are usually taught, in the highest schools.

Then there are not at present teachers to man such institutions: but as we might be treading on tender toes to enlarge here, we will be content with the mere statement of the fact.

But not to deal mearly in objections—there is manifestly a better plan—one which was recommended in this journal several years ago.

The country is already, in a measure, supplied with schools. Common schools exist in some shape and perfection in all the States. Then there are private and select schools, academies, seminaries, and high schools; and still further, colleges and universities. Now why cannot the study of agriculture, in its different branches, be introduced into all these schools? We maintain that it can.

It must be remembered that agriculture is no single study, like arithmetic, or mental philosophy; but that it is based upon and divided into a great number of branches of study, varied and diverse in character. There is perhaps no division of education which consists in maintaining an acquaintance with things which does not bear upon it. Those elementary branches, necessary to educate the farmer, are necessary to educate every other man; and hence up to the higher and more abstruse of its scientific principles all should be educated together.

The studies which belong to an agricultural education are, arithmetic, geometry, natural philosophy, algebra, mensuration, chemistry, geology, mineralogy, physiology of vegetables and animals, and political and domestic economy. To these, at some stage of the course, others might be added—such as would impart a thorough acquaintance with the domestic animals, practical and particular husbandry, and analytic chemistry.

Is there any difficulty in attaching any or all of these branches to our present school systems, according to their various grades? Is not the proper place for them to be taught in our schools, academies and colleges? It is hard to believe that there can be two opinions held by candid persons acquainted with the principles and details of youthful instruction. Yale and Cambridge have already departments attached for instruction in scientific agriculture, and others will undoubtedly follow.

It may be advisable, and undobtedly will be found so, to modify in the higher schools the course of instruction for those who are to become farmers. A college course of studies might easily be formed, leaving out principally, or wholly the dead languages, which consume much time, and substitute those which teach instead a knowledge of *things* —

leaving it optional with the student, at his entrance, to pursue the present, or the new course. The two courses much of the way would be identical.

Should the students of the new class increase to warrant it, colleges of that sort migh be established for them as demanded: and these, having grown out of the demand, would be permanent. It is in general much easier and safer to reform and remodel old institutions, than to revolutionize for new ones. All sweeping and radical changes in education we look upon not only as undesirable, but as chimerical.

There is no rational doubt that a general introduction into our courses of education, of such studies as bear upon agriculture, is demanded by the general interests of society, and will be demanded by society itself, so soon as the case is made clear to its apprehension."

BREEDING HORSES.

As here have been but few examples of systematic horse-breeding in this country, I am under the necessity of making frequent reference to the English practices. The course which has been pursued there, may be expected to produce similar results here, so far as it is followed, especially as our horses have been chiefly derived from various descriptions of English stock.

It is generally admitted that no description of horse is better calculated for light carriages on the road, than the hunter, as he existed in his truest form and best character. "To describe the hunter," says Prof. Low, "is to describe a well formed horse, in which exists that harmony of parts which consists with the best exercise of the powers of the animal. The perfect English hunter is beyond a question the finest variety of horse that exists in any country, combining in a happier proportion than the race horse, the lightness of the horses of the warmer regions, withe the strength of the ancient racers of Europe. If we compare the hunter in his confirmation, with the race horse, we shall find him inferior in the characters which indicate the power of speed, but far excelling in those which show the adaptation of the animal to useful services."

The hunter is used in England not only for the chase, but for the saddle, for military purposes as chargers,* and for the lighter carriages. Prof. Low shows wherein the characteristics of the hunter should differ from those of the race horse. "The hunter," he says, "should possess a good fore-end that he may pass safely along the rough surface over which he is urged, and over the obstacles which he encounters. The low fore-end and elevated hind quarters, which are suited to the power of rapid progression over a smooth surface would, in the hunter, be inconsistent with safety, and the tendency to ewe-neck, which, in the short and violent gallop of the course is admissible, would, in the case of the hunter, be inconsistent with sensitiveness to the rein. The neck of the hunter should be sufficiently muscular, and his chest just so broad as to indicate strength without heaviness. The long stride of the racer not being required in the hunter, he should possess the conformation which indicates strength in the dorsal and lumbar regions, that is, he should be well ribbbed home, and have the back moderately short."

Mr. Youatt says: "The body [of the hunter] should be short and compact compared with that of the race horse, that he may not in his gallop take too extended a stride. This would be a serious disadvantage in a long day and with a heavy rider, from the stress on the pasterns, and more so when going over clayey, poached ground. The compact, short-strided horse, will almost skim the surface, while the feet of the longer-reached animal will sink deep, and he will wear himself out in his efforts to disengage himself. Every horseman knows how much more enduring is a short-bodied horse in climbing hills, although perhaps not quite as much so in descending them. This is the secret of suiting the race-horse to his course, and unfolds the apparent mystery of a decidedly superior horse on a flat and straight course, being often beaten by a little horse, with far shorter stride on uneven ground, and with several turnings."

Compare these remarks with those which describe the characteristics of the race-horse.

"The race horse has been cultivated for a particular end, and the purpose of the breeders has been to call forth in the highest degree those characters which indicate the power of rapid motion. These purposes have been fulfilled, and the form of the animal answers the conditions required. * * His length is greater than consists with perfect beauty, the power of speed having been sought for in a higher degree than that of strength and endurance. His legs are longer and his trunk smaller than the eye indicates as strictly graceful. The length and depth of the hind quarters, a point essential to the power of making long strides, are extended to the degree of appearing disproportionate. The chest is narrow, and the forequarters light, a point likewise characteristic of speed. The neck is straight rather than gracefully arched, and the pasterns are very long and oblique."

These points, although they indicate the adaptation of the animal to the purposes for which he is destined, and in this respect furnish a striking example of the art of man in controlling the animal economy—clearly show that some of the valuable properties of the horse have been sacrificed. With a view to securing the object sought for, speed in the gallop, this may be to a certain extent justifiable. As is observed by Prof. Low, "strength and the power of endurance may be sacrificed for the property of speed, and even soundness of constitution to the artificial uses to which we destine the animal. Not only may these things be, but there is reason to infer that this unrivalled breed has already suffered deterioration."

And how has the hunter, which we have seen possesses a rare combination of valuable qualities, been bred? The impression, I am aware, is entertained by some, that the hunter possesses no such distinctive characteristics as entitle him to be ranked in a separate class; in fact, it is not long since a gentleman, somewhat noted for his knowledge of "horse flesh," was heard to remark that hunters were never kept as stallions, and that mares intended to breed them were always put to blood horses. It is true that blood horses have been often, but not invariably resorted to in breeding hunters; and it seems to be equally true, as will be presently shown, that the infusion of this blood to too great a degree, has been one of the causes of the deterioration of the hunter in strength and constitution.

But in relation to the origin of the hunter, we are informed by Prof. Low, that the lighter and more agile horses of the warmer countries have been mixed in blood with the pre-existing races, so that the form of the latter has been molded to a new standard. * * * The hunters have been mixed not only with one another, but with every other race which seemed fitted to give the confirmation and characters required. The horses of Spain, Italy, and Turkey, nay, of Barbary and Arabia, have been resorted to. * * * The mixture of the blood of the race-horse with that of horses designed for the chase, has been continually increasing, so that the characters of the modern hunter have been more

*A writer in the Farmer's Library, vol. 1, page 301, states that the English cavalry, at the battle of Waterloo, were mounted on *blood* horses. His language is that Bonaparte, "in making his last tremendous struggle to retain the crown of France, experienced and ruinously felt the superiority of blood horses, on which the English cavalry were mounted." This statement is incorrect, as the following testimony shows. Prof. Low says: "The cavalry horse is selected from the *mixed races* of the country. They have the characters of the modern coach horse, and not the horse of heavy draught. They would have been the pride of the times of chivalry, and afford now the example of the most powerful cavalry horses that are anywhere to be found. The memorable field of Waterloo showed their importance. It is known that the lighter mounted regiments would have been overborne by the heavy-armed cavalry of France, but for the presence of the *household troops*." Mr. Youatt, in his work on the horse, observes: "A considerable change has taken place in the character of our war-horses; lightness and activity have succeeded to bulk and strength, and, for skirmishing and sudden attacks, the change is an improvement. * * * There was, however, some danger of carrying this too far; for it was found in the engagements previous to and at the battle of Waterloo, our heavy *household troops* alone were able to repulse the formidable charge of the French guard." *These* were the "*terrible horses*" to which Bonaparte alluded when he saw his own horsemen "literally rode down."

and more approaching to those of the thorough-bred horse. Yet a great distinction has heretofore existed, and ought still to be preserved between them."

To establish a race of horses of this description, is no easy thing, to be accomplished in a year or two; but a work requiring a long course of systematic breeding, continued thro' many generations. The noble characteristics of the hunter, as he formerly existed, are not to be produced, as some appear to suppose, by a single cross of the blood horse with common mares—especially at this day, when, as we have seen, the blood horse (as a breed) has lost many of those properties which formerly imparted value to the hunter.

The diminution in England of hunters of the old standard, which has taken place from causes to which I have before adverted, is regarded by many as a serious loss. Prof. Low's observations on this point are worthy particular attention, both as showing the great value of this description of horses, and the difficulty of producing a new stock of similar and uniform characteristics. "We may be assured that the race of true hunters, if materially diminished or injured in their characters, will not without great difficulty be restored. A simple cross between a thorough-bred horse and a common mare, may produce a good individual, but this is very different from that progressive change by which a class of characters can be communicated and rendered permanent, and a true breed formed."

But the old-fashened hunter has of late given place in the hunting-field to a horse of more blood—to one in fact, possessing the principal properties of the modern blood horse; and this is regarded by some as evidence that the blood horse is better adapted to laborious exercise than the hunter. But a very different conclusion will be formed by a fair view of the whole case. We are told by British writers that the fashion of the chase has greatly changed—"that it has now become a short and fiery gallop." To correspond with this change, a horse of different properties is chosen. Instead of the substantial kind of hunter who could carry his rider and bear the fatigues of the chase for a whole day, a lighter animal, with more speed for a short distance, but with far less strength and capacity for endurance, is used; so that two horses are now required to perform the work which one did before. Prof. Low informs us that "it is now common to have relays of horses, so that a sportsman may mount a fresh one when the first is exhausted." Again, he observes, in regard to these changes in the fashion of the chase—"it is to be feared that refinement has been carried to its limits. The rapidity of the chase has been carried to a degree that assimilates to the sport of a race, animating, certainly, to the highest degree, but differing in the feeling which it excites, from the legitimate exercise of the hunting-field. The effect begins to be perceived in the character of the horses employed, which, in the great hunting counties, are manifestly tending to a lighter form than ought to characterize the hunter."—*Albany Cult.* EQUUS.

"BIG-HEAD" IN HORSES.

The disease in horses called "big-head" is sometimes very troublesome, both on account of the pain and injury it inflicts on the horse, and the difficulty of curing it. J. J. Rossean, in the Prairie Farmer, gives an article descriptive of the disease and mode of cure. He says: "The first appearance of the big-head, when it attacks the upper jaw, is more like that produced by the halter in breaking young horses, than anything I can compare it to. Indeed, so similar are the two, that jockys frequently trade off horses having incipient big-head, stating that the appearances have been produced by a halter. The horse first loses that delicacy of proportion about the head, which is one of his greatest ornaments, looking clumsy and awkward on account of the swelling which takes place first at or near the place where the nose-band of the halter passes round the nose. The tumors are at first small and circumscribed, and may not be noticed by a careless observer. Their situation is on each side of the face at the place above indicated, and when they acquire their greatest size, they extend to the eyes, or thereabout, and their elevation will be one or two inches, and in bad cases more. The head now presents a peculiarly clumsy appearance. Frequently before the upper part of the head advances so far as just described, the affection seizes the lower jaw bone, which becomes much larger than natural."

The shoulder, also, he says, is liable to be attacked. It begins to sweel at the points, from which it extends and embraces the whole scapula. But the disorder observes no regularity in attack and progress. "Sometimes the face alone is affected; sometimes the lower jaw, and sometimse the head is last affected; the complaint beginning in the shoulder, and extending to the limbs, and finally to the head." In some cases, it is said the disorder does not extend to the head, and in such cases it is called the "stiff disorder," though the complaint is said to be the same, as is proved by its being cured with the same treatment. It appears to be known by the various names of "big-head," "big-jaw," "big-shoulder," and "stiff disorder," but the same treatment is recommended for all. The disease is divided into three stages. The first stage is known by stiffness in the limbs, lameness, &c. The second stage is shown by the enlargement of the head, jaw or shoulder. The third and last stage is shown by the protuberances on the head; having gained a considerable size and bony consistence. The treatment for the first and second stages is given as follows:

"1st. Apply a cord around the upper lip, put in a stitch and twist it so as to hold the horse still. This is a common operation, and familiar to every farmer. Then cut through the skin on the middle of the nose, virtically, and immediately on the rounding part between the nostrils. Let the incision be no deeper than to expose the tendon which passes down in this place. Lay hold of the tendon and cut it in two; then cut it off again at the distance of about one inch, taking the piece entirely out. (The piece must be taken out, or the cut extremities would soon reunite.) Next, double one ear and excise about an inch from each cord; so with the other ear."

After the operations have been performed, it is recommended to turn the horse to grass, to give him no grain, and neither ride nor drive him until he is well, which it is said will require several weeks, and it is recommended to give him on alternate days, a tea-spoonful of saltpetre, and a table-spoonful of sulphur, for nine or ten days; bleeding him every two or three days in the course of that time.

In case the disease has reached the third stage before treatment is commenced, it is directed to "bore a gimblet-hole in each protuberant bone of the face, (one on each side,) and introduce into them a piece of arsenic the size of a pea, wrapped in tissue paper."

REARING AND FATTENING HOGS.

A correspondent in Albemarle county, Va., writes,—"Will you give me specific directions for rearing and fattening fifty hogs? That is to say, will you tell me if I ought to keep them confined the year round, or for what length of time and what quantity of different materials should be planted for their food, and at what times, in this climate?"

Our acquaintance with all the circumstances having a bearing on the subject, is not such as will enable us to furnish "*specific* directions." If he rears his hogs from the "start," we should think it would be best to have the pigs farrowed at a time when the sows could be turned on clover, and it would be well if they could have a small range on clover or grass for a week or two before farrowing. We would allow them to run here together till the pigs were five or six weeks old, giving the sows such dairy slops as the farm afforded. If there were no skimmed milk or whey for them, we would feed with slops, made of corn meal and shorts, in equal parts, scalded and allowed to ferment slightly, not to become sour. After the pigs are a week old, the sows may be allowed as much as they will eat, but none should be left in the trough from one meal to another. If milk can be had for the young pigs, at the rate of a quart each, per day, they may as well be taken from the sows at five weeks old; but if no milk can be given, it is advisable to keep them on the sows till seven or eight weeks old—feeding the sows well during that time. If pigs are taken off too young, and have not milk given them, they are lisely to become pot-bellied, and crooked-backed, owing to their digestive organs not having acquired sufficient strength to bear the food which they are obliged to eat. Their constitutions are frequently so much injured in this way, and their shape

so much distorted that they never recover, and never become what they might have been had they received proper treatment. It should, therefore, be made a rule, to allow pigs the milk of their dams, or milk from cows, till they have reached such an age that they can thrive on other food. The great object should be to keep them constantly growing. They should not be full fed and made fat at one time, and starved and made poor at another. The farmer should remember that the loss of a pound of pork wasted from the carcase of a live hog, is just as much of a dead loss, as tho' it had been lost from his pork barrel or smoke house. Hence his swine should never grow poor, but should gain something every day, though it may be expedient to have them gain faster at some periods than at others.

When pigs are first taken from the sows, it is a great assistance to their growth, to have their food cooked Raw Indian corn or raw corn meal, is not easily digested, and it has a great tendency to sour on the stomach, and to induce dyspepsia. These objections are in a great degree obviated by making the meal into good stiff mush — (Yankee hasty pudding) — mixing with the Indian meal a third part shorts or oatmeal, and adding about the same quantity of salt as is applied to mush made for table use. Should the food, after having been duly prepared, produce in the pigs a tendency to scour, charcoal should be allowed them; it will, indeed, be advisable to allow them plenty of this substance at all times, as it promotes their health and thrift.

In separating the sows and pigs, it is better to let the pigs remain in the lot where they have been kept, if the feed is good enough, as they will be more quiet than if taken to a strange place. Dry and comfortable shelter at all times, with cool shade in summer, should be provided.

The pigs may run on the clover till frost puts a stop to its growth. They should then be put in a warm pen with a small yard attached, and well supplied with straw or leaves. If it is intended to kill them in the fall, or in the course of the winter, it will be important that they are always fed about as much as they will bear, otherwise they will be lacking in size. If they can be brought to the dressed weight of about two hundred pounds at eight months old, (as they frequently are at the north,) it is generally more profitable to kill them at that age than to winter them over and kill them the next season; but unless they have the benefit of some dairy slops, they will require close attention to make them reach these weights. If the farmer decides to keep them till they are eighteen to twenty months old, they may be fed through the winter something in proportion to the quantity of food at his disposal. They should at all events have enough to keep up their condition, and if the food is on hand, it may be fed as profitably now as at any time; but if they are made *too fat*, it may in a degree disqualify them from grazing the next season. With hogs which are inclined to grow fast, there is not, however, much danger of this, the increase in weight being rather muscle than fat.

The second season they may be turned on clover, as before, and be fed moderately through the hottest part of the season. As the weather becomes cool in autumn, the feed should be increased, and by the last of September it will probably be best to take them from the fields and put them in the fattening pens. These should be so constructed that the hogs may be readily kept clean and comfortable. They should have an apartment to sleep in, another to feed in, and a third in which to void their dung and urine. Quietude favors the secretion of fat; therefore whatever promotes the animal's comfort, is equivalent to food. They should be fed at regular intervals, with as much as they will eat.

As to the kind of food, much must depend on circumstances. In Virginia, we presume, Indian corn will most advantageously form the leading article. In general, it should be ground, though with the light goard-seed variety there is less advantage in grinding than with the more flinty sorts, as it is more easily and thoroughly masticated and more perfectly digested. A hog, however, can extract the nutriment from a small daily allowance of hard corn; but if full fed he cannot thoroughly digest it, and more or less nutriment is wasted. If the farmer is not within a convenient distance of a mill, it will be expedient for him to set up a small one, to be worked by horse-power. One of Fitzgerald's mills may be had for sixty or seventy dollars, (according as they are geared,) or one of Howard's at thirty-five dollars. With the power of two horses, they will work up from three to twelve bushels, of any kind of grain an hour, according to the fineness required. One of Pitts' corn and cob cutters, which chops up grain to about what is called "coarse feed," can be had for forty dollars, and with a two-horse power, will readily grind ten to twelve bushels an hour.

The expediency of cooking, too, will depend something on the situation in which the farmer is placed as to the facilities for doing it—such as the value of labor, fuel, and the cost of preparing proper apparatus. We believe it has been demonstrated, however, that a gain more than sufficient to pay the cost, is generally realized by cooking. Mott's furnaces, described in our last number, are the best articles for cooking we have seen.

There is an advantage in using a variety of food. A proportion of apples, potatoes, or pumpkins, keeps up the appetite, and makes the animals thrive faster than on corn or meal alone. If the food is cooked, it is best to mix these various articles together, changing and varying the articles from time to time, in order to promote the appetite.

As to the "quantity of different materials that should be planted for the food of fifty hogs, and at what times," we cannot answer, for the reason that we cannot tell what the yield of the crops would probably be, nor what would be the proper time of planting in the latitude referred to.

We are in possession of no definite rule in regard to the quantity of food which hogs require. Some persons allow two quarts of corn daily to each hog of 200 lbs. live weight; and according to some experiments made in Essex county, Mass., a bushel of corn may be expected to make twelve pounds of pork. But a fixed rule in the case is out of the question.

In the above remarks we have had regard more particularly to the interior of the country. In situations where manure is very valuable, it may not be an object to turn the hogs on grass or clover, but may be better to keep them shut up in order to make compost.—*Cultivator.*

NUTRITION OF SUPERFINE FLOUR---WHOLE MEAL

I lately came across the following remarks and calculations of Professor Johnston, and they seemed so practical, and to every day purpose, that I forward them to the Cabinet. But, perhaps the Editor will exclaim, What! "book-eating!" why the very idea of that will frighten our readers more than "book-farming." Perhaps it may do so. No doubt many will put the article aside, and conclude that their stomachs and their fathers' were as wise without chemistry as the Professor's is, in the midst of his laboratory. Still facts are stubborn things, and we all know, who have been so unfortunate as to be dyspeptic ourselves, or to have friends who were, that "bran" bread does suit weak digestive powers, and I am apt to conclude, if the doctor's scales and tests have been right, that there must be something in the results worth looking into. N.

"I propose to show, in an intelligible manner, the whole meal flower is really more nourishing, as well as more wholesome, than fine white flour, as food for man.

"The solid parts of the human body consist principally, of three several portions: the fat, the muscle, and the bone. These three substances are liable to constant waste in the living body, and therefore must be constantly renewed from the food that we eat. The vegetable food that we consume contains these three substances almost ready formed. The plant is the brickmaker. The animal voluntarily introduces these bricks into its stomach, and then involuntarily — through the operation of the mysterious machinery within — picks out these bricks, transports them to different parts of the body, and builds them in their appropriate places. As the miller at his mill throws into the hopper the unground grain, and forthwith by the involuntary movements of the machinery, receives in his several sacks his fine flour, the seconds, the middlings, the pollard, and the bran; so in the human body by a still more refined separation, the fat is extracted and deposited here, the muscular matter there, and the bony matter in the third locality, where it can not only be stored up, but where its presence is actually at the moment necessary.

Again, the fluid parts of the body contain the same substances in the liquid form, on their way to or from the sev-

eral parts of the body in which they are required. They include also a portion of salt or saline matter which is dissolved in them, as we dissolve common salt in our soup, or Epsom salts in the pleasant draughts with which our doctors delight to vex us. This saline matter is also obtained from the food.

Now it is self-evident, that that food must be the most nourishing which supplies all the ingredients of the body most abundantly on the whole, or in proportion most suited to the actual wants of the individual animal to which it is given.

How stands the question, then, in regard to this point between the brown bread and the white—the fine flour and the whole meal of wheat?

The grain of wheat consists of two parts, with which the miller is familiar—the inner grain and the skin that covers it. The inner grain gives the pure white flour; the skin, when separated, forms the bran. The miller cannot entirely peel off the skin from his grain, and thus some of it is unavoidably ground up with his flour. By sifting, he separates it more or less completely—his seconds, middlings, &c., owing their color to the proportion of brown bran that has passed through the sieve along with the flour. The whole meal, as it is called, of which the so-named brown *household bread* is made, consists of the entire grain ground up together—used as it comes from the mill-stones unsifted, and therefore containing all the bran.

1. *The fat.* Of this ingredient a thousand pounds of the

Whole grain contain	- - - - -	28 lbs.
Fine flour	" - - - - -	20 "
Bran	" - - - - -	60 "

So that the bran is much richer in fat than the interior part of the grain, and the whole grain ground together—whole meal—richer than the finer part of the flour in the proportion of nearly one half.

2. *The muscular matter.* I have had no opportunity as yet of ascertaining the relative proportions of this ingredient in the bran and fine flour of the same sample of grain. Numerous experiments, however, have been made in my laboratory, to determine these proportions in the flour and whole seed of several varieties of grain. The general result of these is, that the whole grain uniformly contains a larger quantity, weight for weight, than the fine flour extracted from it does. The particular results in the case of wheat and Indian corn were as follow: A thousand pounds of the whole grain and of the fine flour contained of muscular matter respectively,

	Whole grain.	*Fine flour.*
Wheat	155 lbs.	130 lbs.
Indian corn,	140 lbs.	110 lbs.

Of the material out of which the animal muscle is to be formed, the whole meal or grain of wheat contains one-fifth more than the finest flour does. For maintaining muscular strength, therefore, it must be more valuable in an eqnal proportion.

3. *Bone material and saline matter.* Of these mineral constituents, as they may be called, of the animal body, a thousand pounds of bran, whole meal and fine flour, contain respectively,

Bran, - - - - - - -	700 lbs.
Whole meal, - - - - - -	170 lbs.
Fine flour, - - - - - -	60 lbs.

So that in regard to this important part of our food, necessary to all living animals, but especially to the young who are growing, and to the mother who is giving milk—the whole meal is three times more nourishing than the fine flour.

Our case is now made out. Weight for weight, the whole grain or meal is more rich in all these three essential elements of a nutritive food, than the fine flour of wheat. By those whose only desire is to sustain their health and strength by the food they eat, ought not the whole meal to be preferred? To children who are rapidly growing, the browner the bread they eat, the more abundant the supply of material from which their increasing bones and muscles are to be produced. To the milk-giving mother, the same food, and for a similar reason, is the most appropriate.

A glance at their mutual relations in regard to the three substances, presented in one view will show this more clearly. A thousand pounds of each contain of the three several ingredients the following proportions:

	Whole meal.	*Fine flour.*
Muscular matter,	156 lbs.	130 lbs.
Bone material,	170 lbs.	60 lbs.
Fat,	28 lbs.	20 lbs.
Total in each,	351 lbs.	210 lbs.

Taking the three ingredients, therefore, together, the whole meal is one-half more valuable for fulfilling all the purposes of nutrition than the fine flour—and especially so in regard to the feeding of the young, the pregnant, and those who undergo much bodily fatigue.

It will not be denied that it is for a wise purpose that the Deity has so intimately associated, in the grain, the several substances which are necessary for the complete nutrition of animal bodies. The above considerations show how unwise we are in attempting to undo this natural collection of materials. To please the eye and the palate, we shif out a less generally nutritious food; and, to make up for what we have removed, experience teaches us to have recourse to animal food of various descriptions.—*Farmers' Cabinet.*

CONSTRUCTION OF LIME KILNS.

Mr. Bateman: In your paper of July 15th, you request some one to give a description of the form of a lime kiln, and the materials for constructing one. I have a kiln on my farm, in Wyandotte county, after this form: it stands on a level surface, (though a side hill is better,) it is 7½ feet wide in diameter, (inside,) at bottom, increasing in size to the height of 6 feet, where it is 12 feet in diameter, then diminishing in the same proportion for 4 feet more in height, making in all, 10 feet in height, and the inside form nearly like the shape of an egg, with the smallest end downwards. This kiln will hold from 600 to 800 bushels of lime.

Now for the outside form: lay off the foundation 16 or 17 feet across, (outside,) dig a place for the wall about 1 foot in depth and three feet in width. Any kind of stones will answer, but such as will bear a red heat are to be preferred. Limestone will do, only a portion of the inside will burn off, so that the wall will need to be rebuilt after a few times using. Lay the wall with sand and lime mortar, and make two mouths, or openings for putting the wood in, [on opposite sides we suppose.—Ed.] Make the openings 2½ feet in width, to the height of 2½ feet, then narrowing to a point at 4½ feet in height.

In putting in the limestone, build an arch in the form of the openings, taking the largest sized stones for the arching. When filled, round it at top with small sized stones, and plaster it over with a thick coating of clay mortar, leaving a draught place, say 3½ or four feet in diameter in the centre on the top. In filling, put four or more bars of cast iron across the arch, near the bottom, to keep the wood from the ground, so that the ashes can be drawn out, and to secure a draught.

Lime kilns are very apt to burst in cooling, and the thicker the walls are the better. For the same reason, as well as for greater ease in filling, it is better to build in the side of a steep hill or bank, where such a situation is afforded. The walls, of course, need not be as strong where surrounded with earth. Yours, &c., J. HANNUM.

Ohio Cult.

ADDITIONAL DIRECTIONS, BY PROF. JACKSON.—The following remarks on constructing a lime kiln, and burning lime, are taken from Prof. Jackson's report on the Geology of the State of Maine:

"The kiln is of a cylindrical form, rather wider outside at the bottom than at the top, so as to give it more solidity. It is ten feet high, and five feet in diameter at the top, while the bottom internally contracts a little, so as to support the charge. This contraction is unnecessary, excepting where the limestone crumbles or "*fine burns*," during its calcination. The arch may be made four and a half or five feet high, and two and a half or three feet wide so as to allow room for discharging the lime, after it is burned. The kiln may be made of any rock, capable of withstanding a dull red heat. Talcose slate, mica slate, or even common clay slate,

will answer. It must be pointed with clay inside, and with mortar on the outside. In charging this kiln, the stone is broken into suitable sized pieces, and an arch is built up, corresponding with the arched opening and extending quite across the damameter of the kiln. Having laid up this arch loosely, pack the kiln in a careful manner, until it is half full of the broken limestone; then you may throw in the smaller pieces on the top, and fill the kiln entirely. It is now fit for burning, and you have only to place the wood and kindle a fire in the arch, keeping the heat gradually increasing, until the limestone is sufficiently burned. This may be known either by the time required, or by the appearance of the pieces at the top of the charge. It will generally be noticed that when the fire has done its office, that the smoke ceases to appear at the top of the kiln, and a flame rises through the interstices at the top. The charge begins also to settle a little. The time required for the burning of lime, varies with the different kinds of lime rock, and hence it is alone to be learned by experience in a particular case, and with the kind of kiln with which the lime-burner is acquainted. One or two fair trials, will teach any intelligent man how to do the work in a proper manner. The cost of the lime prepared in a small kiln, is always a little more than when it is made in a large way; hence where an extensive demand exists, the three hundred cask kiln would prove the most profitable to the manufactarer. Most of the limestones here described, may be burned at the cost of 25 cents per cast, in buls—or for 50 cents, packed in casks. Where it is to be used on the spot, in agricultural improvements, it may be thrown out of the kiln, and allowed to slake itself, and then it is ready for immediate use. Its weight is increased from thirty to fifty per cent. by slaking, and its bulk is tripled or quadrupled; hence, where it is to be transported to a distance, it is better to take it in its caustic state, either in bulk or in casks.

A shed ought to be built near the kiln, so as to keep the lime under cover, to prevent its being wet by rain.

Rock, fresh from the quarry, burns more easily than after it becomes dry by laying exposed to the action of the sun and air.

EXPERIMENTS WITH CLOVER AND TIMOTHY SEED.—Desirous of learning, by direct trial, at what depths clover and timothy seed would germinate, I made a narrow trench in a favorable situation, three and a half feet long, increasing in depth from the surface at one to the other end, where it was six inches deep. The bottom of it was therefore an inclined plane and was made smooth and even, by pressing a straight edged board forcibly upon it. Thus prepared, the seed was sowed thickly in the trench, its whole length. In twenty-four days, at an average noon temperature of forty-five degrees, the plants appeared at the surface for four inches from the shallowest end towards the deepest part of the trench; and afterwards continued to appear from still deeper portions of the ground for seventeen inches, when it wholly ceased to vegetate. Three months have now elapsed, and not a leaf has shown itself beyond the point just named. The clover and timothy sprouted alike, and ceased to germinate at the depth of two and a half inches. The plants are now nearly a foot high at the shallow extremity of the trench; and diminish in stature as the trench deepens, the lowest being about five or six inches in height. The intelligent farmer will, of course understand the object, and appreciate the value of this experiment.

Some of the same seed was scattered on the ground, at the same time, and left uncovered. It vegetated in due season; its radicles, from an eighth to a fourth of an inch long, lay exposed to the snow and frost for some time, and finally found their way into the earth.

J. T. P.

Southern Planter.

AGRICULTURAL STATISTICS.

The Agricultural report by the Commissioner of Patents for 1847, has been published. We have not seen it, but find in some of our exchanges statistical tables copied from the report. These tables are not made up from the most authentic data, in all cases, and therefore should be taken with some caution, especially if the compiler be not a man thoroughly conversant with the subject, and such a man is not the present Commissioner of Patents. The mode in which the information is obtained is this: The Commissioner addressed a circular to many gentlemen throughout the country, noted for the interest they take in such matters, asking them to fill up the accompanying blanks, with their estimate of crops in their several counties. These estimates must be loose, and often erroneous, for a man may be a very good tiller of the soil or breeder, and at the same time wholly incompetent to perform the service required. The mode adopted is, however, the best possible one in the absence of proper governmental provisions of ascertaining the facts authentically, and the results stated by the Commissioner may probably be relied upon as a tolerable close approximation to the truth. The Pennsylvanian publishes the following table showing, as thus estimated, the aggregates of the principal articles of agricultural product in the United States, for the years 1840 and 1845:

		1840	1845.
Wheat,	bush.	84,605,000	108,548,000
Barley,		4,157,000	5,160,000
Oats,		122,870,000	163,208,000
Rye,		18,600,000	27,173,000
Buckwheat,		7 224,000	10,268,000
Indian Corn,		377,368,000	417,899,000
Potatoes,		108,241,000	88,392,000
Hay,	tons,	10,055,000	14,065,000
Flax and Hemp,		180,000	37,500
Tobacco,	lbs.	218,093,000	187,422,000
Cotton,		790,479,000	936,088,000
Rice,		80,303,000	89,765,000
Silk, Cocoon,		55,409	486,530
Sugar,		150,444,000	226,026,000

This table shows a large increase in the productive industry of the country, but large as it appears, we suspect it is less than the reality. Certainly, at no period in our history has the country made greater physical progress, notwithstanding all opposing obstacles, than during the last five years. How we have been enabled to overcome these obstacles and enjoy comparative prosperity in spite of the evils of bad government, is explained in the following remarks, copied from the report:

"Every year introduces, likewise, to the agriculturist, some additional implement by which his labor is lessened, or better done; and while he is thus saved somewhat of the sweat of his brow, he is likewise assured of the greater profits of the fruits of his industry. There is, thus, mutual dependence as to the pursuits of the farmer and those of the artizan. Mechanical industry presents him with the results of her inventive genius. With these in hand, he forces from the earth her increase, and by the blessings of a kind providence, is enabled to pour out to the community around him a lavish of Nature's bounties, such as no other country can so universally boast. In view of his own approved tools and means of culture, he may well wonder how his fathers, and even himself, formerly could have been satisfied with the ruder ones which have been so long in use. We are, however, but at the commencement of these better things.

"The researches of each successive year, and the multiplied faculties added to the train of conveniences enjoyed, authorize the belief that the advancement of agricultural industry is destined far to exceed any that has yet been seen."

"Beside the table given above, we find one showing the products of wheat, corn, potatoes, tobacco and cotton, in the several States for the year 1845. We have not room for these tables to-day, but the following comparison by a writer in the Albany Argus, for the facts they disclose, will be found interesting:

"In the article of Wheat it will be seen that New York, in 1840, ranked as the third wheat-growing State of the Union, in 1845 ranked as the first State, Ohio holding the second place, and Pennsylvania the third. The States of Georgia and Maine shew a decrease. The increase in Vermont and Tennessee is nearly 100 per cent.

PASTURING WHEAT—THE FLY.—Our wheat crop the past season was a good deal injured by the fly, as well as by the winter; and the inquiry arises, whether pasturing with sheep when the fly is at work in the spring is not a partial

protection against the fly. I had two fields that looked equally well in the second month and part of the third. In one of these I turned my sheep, and that field produced a fair crop, while the other was so much injured that it did not produce a fourth of a crop. JOHN BATTIN.

REMARKS.—Pasturing wheat fields in the spring, has often been recommended, and successfully practiced as a protection against the fly.—ED.—*Ohio Cult.*

CISTERNS ON FARM BUILDINGS.

Pure, wholesome water, as a constant beverage for man or animals, is essential to sound health. Its relative salubrity descends on the various animal, vegetable, or mineral particles, with which it may be impregnated, and the places whence it is procured. The transparency or purity of that obtained from wells or springs, varies according to the strata of earth through which it percolates. The most wholesome fluid is derived from springs issuing from pure sand-stone or primitive rocks, or from sandy soils, principally composed of granite or quartz, where it has undergone a perfect filtration. The water of lakes and ponds has similar properties in general, as that of rivers or brooks, but being less agitated, or containing more organic matter in a state of decomposition, it acquires a greater degree of impurity, and consequently is less fit for culinary use; though, on account of its softness, it may be employed with advantage for washing clothes.

Rain-water collected in the vicinity of cities or populous towns, as well as in the neighborhood of marshes or mines, especially during summer, is always more or less impure. Therefore it should not be used, if it can be avoided, except for washing linen, &c., or watering plants, unless it be purified by filtration or other means. The fluid obtained by dissolving snow is somewhat purer; but of all natural waters, that obtained by melting hail is the most pure, as it contains fewer extraneous particles, in consequence of its congealing high in the air; so that it cannot combine with noxious ingredients during its descent. Like all water, however, which falls from the clouds, it contains minute quantities of air, carbonic and nitric acids, carbonate of ammonia, and other salts.

Well, or pump water, is generally less pure than any of the preceding, as it frequently contains large quantities of carbonate or sulphate of lime, which are the cause of its "hardness," and the property of curdling soap. In all large towns, that have long been inhabited, the wells are generally rendered unfit for use in consequence of the ground having been tainted by church yards, vaults, and orher nuisances, which doubtless, is the cause of much sufferiug, and even of the shortening of life itself. Therefore, in all regions where lime-stone or other impurities in the soil abound, or where the farmers unavoidably have to sink their wells to a great depth, we would recommend the construction of cisterns near all of the principal farm buildings for retaining the water which may fall from their roofs. By this means a large supply of wholesome water may be had all the year round, at a comparatively small cost, which will not only be essential in all purposes about the house, but will be found useful in irrigating the garden, as well as for the watering of stock.

The most convenient and durable mode of constructing a cistern, is, to make it of a circular form, under ground, with the bottom and sides lined with stones and bricks laid in hydraulic cement; and in many cases mortar may be plastered directly on the sides of the pit without the aid of bricks or stone. A cistern, eight feet in diameter and nine feet deep, will hold about one hundred barrels, and will require three thousand four hundred bricks to face its sides. The cement to be employed should be of first rate quality, such as that used in the construction of the Croton aqueduct, or the Erie canal. If this cannot conveniently be obtained, a very good article may be made of four parts brick dust, finely screened; eight parts fine, sharp, fresh water sand; twelve parts lime completely slacked by burying in the ground, so as to exclude the air during the process of slacking; three parts powdered quick lime, newly burnt; and three parts powdered charcoal. First, mix the slacked lime, brick-dust, charcoal and sand with water sufficient to make a mortar thinner than usual, then sprinkle in the quick-lime. Mix well with a trowel, and use immediately, as it will soon grow stiff and hard.

Cisterns should be completely covered with planks or stone, so as to exclude all insects, leaves and dust. If the buildings be situated on a hill side, it would be preferable to conduct the water to the place where wanted for use by means of a pipe, without the labor of pumping, or lifting it out by hand.—*American Agriculturist.*

ROADS.

It is a fact often forgotten, that the value of lands depends not only—and often not chiefly—on the state of improvement they are in—nor on their productiveness; but essentially, on the facilities for communication between them and market. Roads make farms, and the want of them unmakes them, or leaves them unmade.

A month or two since the Prairie Farmer contained an extract from the Monthly Visitor, which stated that lands in various places in sterile New England were producing the interest of five hundred dollars per aker—a most astonishing fact, surely. The secret of the fact was, and is, that the lands were not only productive, but their product can be forwarded to a market for sale. New England is now placing herself on an impregnable basis of prosperity, and making herself a central territory of the Union, by constructing rail-roads in every direction, but all centering with her. A New England paper before us has the following notice:

"*Influence of Railroads.*—A short time since we met a heavily loaded team a little distance from town, carrying chesnut sleepers to the depot. Being of a peculiar shape, we inquired to what use they were to be appropriated. The teamster replied that they were engaged by a contractor, and were to be shipped to Havana, to build a rail-road in the island of Cuba! Concord chesnut, once nearly worthless, now bringing a high price, and shipped 2000 miles to build railroads! We believe the teamster's load was worth above $50, all clear gain through the magic influence of railroads.

A respectable citizen of our town, once a resident in Springfield, on the dreary height of land between the Merrimac and Connecticut, near which the Northern Railroad is to pass, lately informed us he had tried long and earnestly to sell a lot of timber land for $1 per aker, but all in vain. Not long since some gentlemen called upon him, and offered $16 per aker, which he accepted, though he might have done better by waiting.

See the wonders of railroads, not merely in the cheapness and rapidity of locomotion, but in the new value they give to real estate."

Upon which the editor of the Visitor remarks:

"Great as has been the rise of property near the railroads in New England in price to the purchaser, the nominal price by no means represents the difference in the intrinsic value. A tract of land without an income, with no immediate prospect of any practicable income, has no value: a tract of land which presents an immediate available value in what it may be made to produce, in what is upon it, has a value beyond its first estimate.

To give an example of the influence of railroads: Hundreds and thousands of akers of our poorest lands along a line within then miles of the Concord railroad track were covered with a second growth of wood of from one to two feet diameter. Much of this was chesnut wood, not fit even for fuel, and only used sparingly where it was wanted for posts and rails to be used about ordinary farms. As standing timber every body was willing to give it away for the cutting and carrying off. Chesnut timber is found to be a most durable and excellent article for fencing or any other purpose where there is exposure to the weather. At first thought to be inferior to swamp cedar, it was chosen for the foundation timber for railroads where cedar could not be produced: the experience of a few years gave it a decided preference over cedar for that purpose. The demand for the article has so increased that the price of these cedar beams or rails suitable for the road has gradually risen from ten to thirty cents, or nearly three for one. The value of this inferior timber standing upon a single aker is frequently fifty and up to a hundred dollars, where it was heretofore counted to be as nothing.

As with the chesnut growth, so it has become with every

aker of wood growth located near a railroad. If the original beautiful white pines had been left standing, the land would have been worth a hundred for one in some cases. The pine lumber upon Connecticut river, one hundred miles to the north of the Concord railroad depot, is carted all the way here; and a gentleman informed us recently that this opening had doubled the value of a lot of pine timber which he purchased three years ago."—*Prairie Farmer.*

STOCK VS. GRAIN.

It is stated in the July number of the Farmer that "stock raising" is more profitable than the growing of grain. Now without denying this positively, I have something to say against it. Suppose a farmer to be within ten miles of market, and pork to be worth 2½ cents a pound. Corn will then be worth 25 cents per bushel. The question is whether he shall take his corn to market, or feed it to his hogs From some experiments witnessed several years ago, I conclude that a bushel of corn will make about five pounds of pork, more or less, according to circumstances, but this is the average—which five pounds are worth (according to the above) 12½ cents, while the corn is worth 20 cents, allowing five cents for shelling and hauling to market. I am aware that it will be urged in opposition to the above, that hogs grow a great deal during the summer before having any corn. This is true, but all they gain will be required to balance the risk incidental to live stock, and the cost of slaughtering and marketing your hogs. The profits of stock will increase while those of grain will diminish, as you go further from the market, and the reverse as you go nearer; but from these propositions farmers can estimate the profits. I know that corn is an uncertain crop in the market; but it is not more so than pork—neither is any other grain.

Now hogs are generally admitted to be as profitable as other stock; therefore it is unnecessary to say more. I know that the above assertions are opposed to the fixed opinions of most farmers in the country, (who are mostly in favor of raising a great many cattle,) still I think they are true.

For the benefit of those who wish to know the profits of prairie farming, I transmit the following:

Cost of raising 25 akers of corn.

Clearing off rubbish left from previous crop, -	12 days.
Breaking up ground, - - - - - -	12 "
Furrowing, - - - - - - -	8 "
Planting, - - - - - - -	12 "
Cost of seed, one day's work, - - -	1 "
Harrowing twice and plowing once, -	16 "
Gathering, - - - - - - -	36 "
Shelling and hauling to market ten miles, -	62 "
Total, - - -	159 "

At 50 bushels to the aker, (which is a fair average,) you have 1250 bushels, worth at 25 cents, $312.50. Besides this, which is about as much corn as one man can raise, he can raise wheat enough for his own use, oats for his horses, besides hay for his cows. H. SHAW.

Tremont, Illinois, August, 1847.—*Prairie Farmer.*

THE APPLE TREE WORN.

There is a most mischievous enemy of the apple, that attacks the fruit only; and where it prevails is known as the apple worm. It is a true catterpillar, not a grub, like the plum and cherry weevils; and is the larvæ of the moth called *Carpocapsa pomonella*, the codling or fruit moth.

A good description of this worm, with figures, may be found at page 230 of Kollar's work on insects. In some years this apple worm has been so common in New England that a very large part of the apples were rendered worthless by it. It is very rare in the interior of the States, but we have occasionally met with it, and it is to be apprehended it will become still more common. The moth appears in the latter part of June or beginning of July, and without puncturing the fruit, deposits its eggs in the hollow at the blossom end of the fruit, where the skin is most tender, and the worm the least liable to disturbance. As soon as the worm is hatched, which is in a few days, it commences eating into the young fruit, making it way from the eye towards the core, and marking its presence by the powder thrown out of the opening. The moth seems to prefer early to late apples, and the thin-skinned summer fruits suffer the most extensively. In the course of two or three weeks the worm has burrowed to the core, and attained its full size. To get rid of the matters made in its excavations, it cuts a round hole through the side of the apple, and thus is enabled to keep its burrow clean. Sometimes the worm leaves the apple before it falls, but usually the injury it has received causes it to fall prematurely, when the worm quits it, and spins a cocoon, in which it changes to a chrysalis, and in a few days more the perfect insect appears, to renew the work of destruction. These are only the earlier ones; the later ones do not perfect their transformations till the ensuing spring. The surest mode of destroying the apple worm, is to allow swine to run in the orchard, to gather all the fruit that first falls; or where this cannot be done, to pick them up by hand and feed them to some animal. The plum weevil and the apple worm are distinct insects. The plum weevil has been found in the apple, but the apple worm never in the plum.—*Gaylord's Prize Essay.*

ORDER OF AGRICULTURE.

We are agreeably surprised to perceive that kingly distinctions begin to be conferred upon the tillers of the soil. These honors have too long been conceded to the useless classes—the non-producers—the titled paupers who live at the expense of those who work. In times of old, the successful candidates for knightly favors were men of blood—bold robbers and cutthroats. In modern days, wealth and high birth have mainly constituted the claims for such distinctions, although in eminent instances, they have been conferred upon men of great attainments in science and the arts, as the reward of literary merit.

But the pursuit of agriculture—the art that lies at the foundation of all others—the subtraction on which rests not only all the industrial interests but the whole structure of governments, with their array of dignitaries, and dependents—has not been deemed worthy of heraldic or knightly honors. The toil of the vulgar millions has been so long despised, that false opinions of what is truly honorable in the pursuits of life, a false pride, and a false manhood, have ruled the world.

That the weak and pernicious notions about the ease and dignity of idleness and usefulness may fully give away, everywhere, to the common sense which teaches that labor is honorable—is the only true wealth—we heartily hope. And we have an admiration for the enlightened monarch who has set the illustrious example of instituting an "Order of Agriculture." We see it in the triumph of intelligent labor—the earnest of what the future will give to us—when it shall place agriculture and the useful arts in the foremost rank of civic and national honors:

The King of Prussia has just created an order destined exclusively to agriculture, that is to say, to cultivators and persons who distinguish themselves in the department of industry. The decoration bears on one side the effigy of the King of Prussia, on the other, a motto, "For agricultural merit," surrounded with a crown of wheat, with vine and olive leaves. These classes are to be established in this order—the King reserves to himself the exclusive right to distribute the order of the first class; the second and third will be granted to farmers presented by the College of Economy. The distribution will take place annually, on occasions of agricultural festivals, and the solemn sessions of Agricultural Societies in the Prussian Monarchy.

Prairie Farmer.

CULTIVATE THE FARMERS.—A gentleman in Wisconsin writes:

"It is just as it should be, that your paper, while it endeavors to counsel the farmer respecting the cultivation of his farm, should also aid him in the cultivation of the minds and hearts of his children. The farmer who directs all of his attention to his farm, and has the best of crops, the best of stock, the best of buildings and fences, and leaves his family to grow up uncultivated, is deserving of but little praise, and has done, or is doing, but little to enhance either his own happiness, or that of his family. Just think of it—a well cultivated farm—good horses, good cattle and sheep,

good swine, all of choice breeds and *carefully bred*—and children *uneducated, uncultivated, growing up ignorant and neglected!* I doubt, however, whether the farmer who neglects the education of his children can have, or will have, a well cultivated farm; and I doubt not that you will find that those who are most interested in the science and art too of farming, and are deeply interested in your valuable paper, prize most of all its educational department. I send you my name, therefore, for the Farmer, hoping that you will not do less for the cultivation of our western soil than you have done, but that you will do much more for the cultivation of our western minds and hearts. Our *young farmers* need full as much cultivation and attention as our *young farms*."—*Prairie Farmer.*

CONVENIENCES OF HOME.

Messrs. Editors: — This is emphatically the age of improvement in agricultural affairs; and I am glad to see the labors of man so much lessened by the spirit of invention abroad in the land. There is one department, however, on the premises, which has not hitherto received that attention which the merits of the case demand, and that is the female department of labor upon the farm.

Our beautiful western country is being settled mostly by young farmers, many of them starting immediately after marriage to settle themselves in the garden of the earth. They come with high expectations of wealth and happiness; and perhaps a word of caution, to such, if heeded, may save them years of bitter regret. Look at yonder happy pair. The young bride has bid farewell to friends and home, to become a voluntary exile. She will follow her husband to the ends of the earth if necessary. She expects to meet hardships and privations in a new country. The little hut is not as convenient as the comfortable dwelling of her childhood; but she is willing to get along with it, and to assist him all in her power to get a living. The husband in his zeal to get rich, often expends an undue proportion of his money in lands, for the sake of having it said that he has a large farm, not stopping to think how much he ought to reserve to fit up his humble domicil, in order that his wife can do her work with ease and comfort; but he says, "Jane, you must try and get along as well as you can. I know our house is cold and leaky; but I can't stop to fix it. We must make it do for the present; when I get rich we will have a better one. I know it is hard for you to bring water from that spring away yonder a quarter or half a mile; but I can't afford to dig a well yet. I must enclose and break up my large farm, or I shan't get rich as fast as neighbor such a one. Jane you must try and pick up wood, for I can't spend time to cut it this hurrying time of harvesting. I have so much work on hand that I can't attend to such trifles. But I want you to remember, my dear, and get our dinner ready in season." So Jane, good dutiful wife that she is, put up with all the inconveniences above, endeavoring to keep up her end of the yoke; and she may for a while succeed—but be careful, my good friend, and see to it that you dont make her carry the short end of the yoke too long. Habit is second nature; therefore beware lest you forget the improvement which you promised her when you got able; for by and by you will probably find yourselves surrounded with a company of little responsibilities; and unless you improve the facilities for her work, you will find that her delicate frame will drag—the rose will leave her cheek—those active limbs will become weak and nervous—and if not laid in a premature grave, she will probably be an invalid for life. Thus you see there will be a shade of gloom cast over the picture of happiness which you had painted. We would not attribute this to the want of affection, for we see the fond husband spare no pains, no money, to restore his wife to health, after the constitution is broken down; but the old adage says that an ounce of prevention is better than a pound of cure. So it is, for sad experience has taught me that it is easier to retrieve two ruined fortunes than one ruined constitution. It is true you may accumulate property by being thus self-denying—you may extend your fields as far as the eye can reach, and own all the land that joins you—yes, and in time you may have erected a splendid mansion—but where is she, who has borne the heat and burthen of the day with you, and should have been a sharer with you in all this comfort? Alas! in many instances she lies beneath the turf, while her husband is left to buffet the storms of life alone, and her tender children committed to the hands of strangers.

I have not enumerated half the ways which woman oftentimes has to travel—but enough. I am no stickler for *ladyfied* farmers' wives nor daughters—by no means; but if there is a female to be envied, it is a farmer's wife who has a comfortable dwelling, out-houses, a good wood-house, well, cistern, sheep and cows, &c. Matilda.

Mukwonago, Wis., Sept., '47.—*Prairie Farmer.*

A WORK TO FARMERS ABOUT THEIR BOYS.

"Dark needs no candle now, for dark is light."
[Shaks.

I hope and trust, that I shall not seem to any to be presumptuous, in addressing a few words to so large and respectable a class, upon the topic, which I have selected for the present article. I know that there are very many of that class, and would that the number were greater than it actually is, to whom the suggestions, which I may make will be needless, but having a profound regard to the interests and welfare of the rising generation, and knowing that there are parents, who shamefully neglect the minds of their children, I will pen a few thoughts, which I hope those for whom they are intended, will read and carefully consider.

It is a deplorable fact, that many farmers pay very little attention to the education of their boys: (I say nothing here of their daughters, but will leave that, for some correspondent of the fair sex.) Too many farmers say, when they are entreated upon this subject, "well, I never attended school more than four or five weeks in a year, and what I did attend was before I was seventeen years old; I have always got along well enough in the world, and have been as good a farmer, and have made as much money as I should, if I had spent all my youth in school." Wise man! have you ever looked upon one of your fields, when from neglect for a short time, the weeds had sprung up, and in their rankness had outstripped the plants, which it was for your interest to cultivate, and had thus marred its otherwise beautiful appearance? I know you have seen all this, and have given it your proper attention; for this I would honor you. But let me tell you that your own mind is completely overgrown with these weeds of neglect; you have regarded that, which is material, but the mental — that which allies man to his Creator, you have utterly neglected. But you are not accountable for all this, it was the fault of your fathers; yet their fault is trivial in comparison with yours, if you suffer your sons to grow up in ignorance. The words of the great poet, which I have quoted, cannot be applied to their times, for they had poor advantages of giving you an education; common schools then had short terms, and academies were sparingly scattered over the country; but, "Dark needs no candle now, for dark is light." Now we have good schools in every district, for a large part of the year, so that there is no obstacle, save their own will to prevent farmers from giving their sons a good practical education, which will make them thrifty farmers, respectable citizens, and useful members of society; but this is not all, it will greatly augment their own happiness, as well as the prosperity of the community. Look at the subject in this aspect, and consider that you in a great degree, meet out to them knowledge or ignorance. The times demand that your sons should have a better education, than you have. If you keep them from the district school half of the term, sending them one day and detaining them at home the next, to delve in the soil, (which is nearly as bad for them, and *far worse* for the teacher than retaining them at home all the time,) you must expect, that when they assume the duties of citizens, and are actively engaged in business, a feeling of regret mingled with indignation will arise in their bosoms, when they consider your treatment towards them. They will look with contempt upon the riches, you have acquired for them by the labor of their hands; they will say, would that we could purchase an education with this vile trash, which our fathers have foolishly left us. Thus they will be compelled to remain wrapt in the thick mist of ignorance, and no benign gale will sweep over the earth to drive it away;

thus they will be doomed to pass their lives as ignoramusses, in worse than Cimertan darkness. Count not that riches, which consists of gold and silver, but that *knowledge alone*, which fits a man for virtue, happiness, and usefulness; train up thy son for these, rather than to become a miser, or as the poet expresses it, "The laughing stock of devils and of men."

But there is another light, in which this subject should be considered. Sending a son to school even until he has arrived at manhood, does not completely educate him; if his storing his mind with knowledge then ceases, he is but poorly educated, for he will forget half he has learned, and the other half, save what he brings into direct practice, he will see as "through a glass darkly." The mind must *advance* in knowledge, or else it will necessarily *retrograde;* the *man* as well as the *boy*, must improve his mind; and for this intellectual improvement of the *man*, you, fathers, are responsible, although the assertion at first thought may seem false. Parents fail of discharging a most important duty, by neglecting to cultivate in the minds of their children, a taste for reading, which should be cultivated until it becomes a passion. Then the mind will be continually advancing, and the man will become more and more useful every day that he lives. Parents should purchase books adapted to the age of their children, if they have no access to libraries, and thus lead on the youthful mind from step to step, until it shall arrive at maturity, when like an *automaton*, it will have that within itself which will keep it in motion. Lord Bacon has told us that reading makes a full man, and every one subscribes to the truth of it; yet few parents, comparatively put it in practice. New England farmers and fathers, the most honorable class of men in the wide world, see to it that you make your sons "full men," and thus give the world such an illustration of Lord Bacon's remark, as it has never yet seen! Thus rear your sons, and honor and glory shall beam upon you in your declining years, and knowledge and virtue shall make your sons eminent and useful citizens, the firm support of our beloved country. LECTOR.

Boston Cultivator.

WHO IS THAT YOUNG NAN ASHAMED OF THE PLOW.

We sometimes hear of young men too proud to be seen laboring in the fields—indeed we are not sure that we have not seen such. Now, nothing can justify any man in eschewing manual labor on his farm, unless it be that he can otherwise be employed in the superintendence and direction of the labor of others, or that easy circumstances allow him to indulge his leisure in the luxury of acquiring knowledge by conversing with men of superior minds, personally or from their writings.

Do men of narrow minds who despise labor remember that in Rome, after the expulsion of the Kings, seven akers were allowed to each citizen? Curius Dentatus, Fabricuis, Regulus, and others distinguished as the most deserving among the Romans, had no larger estates. Cincinnatus, according to some authorities, had only four akers. On these limited spaces they dwelt and cultivated them with their own hands. Until he tries it, no one knows on how little land all the essential comforts of life may be produced.

It was literally from the plow that Cincinnatus was summoned to be Dictator; and the Samnian Ambassadors, when they went to Curius Dentatus to sue for peace, found him on his farm, cooking his repast of vegetables in an earthen dish. To purchase easy terms they offered him vessels of gold, but the noble Roman disdainfully refused their offers. "I prefer," says he, "my earthen pots to your vases of gold. I have no desire for wealth, and am satisfied to live in poverty and *rule over the rich.*" Can any one, pray, tell us where any of the old Dentatus stock can be found.

Farmers of the United States!—you for whom alone we care and labor—if you can find the least sprinkle of that old blood, seize on it as you would on a scion of the choicest fruit about to become extinct, and try to breed back on it, until we can get a stock of honest men for public functionaries of every sort, whose study shall be to diffuse knowledge, to inculcate economy, and to promote peace, and such distribution of the public moneys collected from the landed districts, as shall enlighten and purify the mass of the *cultivators of the soil* until the wisdom and the forecast of the constituency shall be reflected by all of our public men and public bodies. If ever you can get, for instance, one of the old Washington stock, one who will tolerate freedom of thought and of speech, and go exclusively for the constitution and the public good, persuade him to hold on until his new and salutary system of management of the public farm shall be thoroughly developed and well rotted—until an odious system called the "spoils system," worse than the Canada thistle, shall be extirpated from the whole earth, and the anxieties of our young farmers shall be withdrawn from the tree of patronage and the fruit of office, which turneth to ashes in the mouth, and their contemplations be turned on *their own condition, business, and rights*, and to the means of their vindication and improvement.

In this exhortation there is no narrow suggestion or spirit of party. It is intended and believed to have a direct bearing on the prosperity of practical Agriculture; for, depend on it, as respects the ultimate welfare and safety of your pursuit, they rest, as does public virtue itself, upon *knowledge*. How many idle young men have we, standing where idleness ever does, on the brink of ruin, and who could get ten times as much land as satisfied a Cincinnatus or Dentatus, who are yet ashamed to labor, but not ashamed to enroll their names on the list of the most abject of all slaves—slaves whose daily bread *depends on the capricious breath of arbitrary power!—Lancaster County Farmer.*

MR. BANCROFT UPON AGRICULTURE.

It will be seen by the following that Mr. Bancroft, our Minister at the British Court, knows how to acquit himself of a graceful speech at an agricultural dinner, as well as to write a good history: [always save and except his disrespectful words used against Gen. Harrison and his short administration.]

At the dinner of the Royal Agricultural Society, at Northampton, on the 22d ult., Mr. Bancroft, the American Ambassador, upon the health of "The Foreign Ministers" being given, made the following graceful speech: He said he could hardly find words to express his gratitude for the kind manner in which his country had been alluded to. Altho' the Minister of a foreign country, he was not altogether a stranger in that meeting, for nature had established bonds of union between the farmers of every nation on the face of the earth. The same sun shone upod them all; the same seasons as they returned furnished the seed-time, and ripened the harvest. The celestial influences to which he must look for a blessing on his exertions, might well blend in the breast of the husbandman with that spirit of brotherhood which had made the tillers of the soil —especially those of Anglo-Saxon origin—the guardians of freedom and conservators of peace. Wherever the counsels of the cultivators of the soil prevailed, there it was certain that nations would dwell in peace. Nor was that the only point on which foreign nations found themselves interested in societies of this kind. Wherever he turned his eyes he beheld evidence of the spirit of enterprise and improvement which distinguished the people of this country. They rifled every clime of fruits and flowers to enhance the value of their own. Everywhere you had evidence of the combinations of interest which connected together the nations of the earth. Since he had been in England he had seen American plants to which English skill and culture had been applied, and they had attained a degree of beauty and perfection which they never possessed in their native soil. It had afforded him the highest gratification to witness the beauty of the horses and stock exhibited that day. Agriculture in his country differed very much from that in England. In England the farmers went through a course of work which had been continued from century to century, and had only to perfect what their forefathers had handed down to them; the Americans, on the other hand, had to grapple with the difficulties of nature; to tame, subdue, and render useful the natural exuberance of their exhaustless soil. Nothing had struck him more since he had been in England than the manner in which the fields were cultivated and weeded by the hoe and the hand. In America the trees were older than the roads — older than the towns—and, where spared, were the oldest monuments existing in the country. In England not an animal was

suffered to live, unless it could produce a passport and prove its right to be fed and fattened. The farmers of England cultivated the soil beneath the beloved churches which stood amid the graves of their fathers, that seemed to shed a sacred influence on their toils. With the Americans, beneath whose blows the forests fell — with that moving and active population, those who now lived upon the soil were more numerous than all who slept beneath it. There the agriculturists, with the instruments of husbandry in their hands, were obliged to erect school-houses and churches, and prepare for competition with the mother country in all that was calculated to promote the prosperity of mankind by the advancement of religion, and the cultivation of science and art. In the name of every American he responded to the wish that peace might forever prevail between the two countries. Let it be hoped that the relations of commerce and the interchange of intelligence between the cultivators of the soil in the two countries, would knit them together in such bonds of amity that no apprehensions of a rupture need be entertained. With these sentiments, uttered from his heart and soul, he responded to the sympathy shown for his country, and would conclude by praying for the prosperity of the farmers of England.

EXAMPLE FOR OUR AMERICAN YOUTH.

The late judge Buel of New York State, well known for his love of agriculture and other scientific pursuits, was a poor boy in early youth, and he began life at the age of fourteen in a respectable printing office, from which he became publisher and editor, and finally eminent for his agricultural writings, experiments and discoveries. Amos Dean, Esq., of Albany in a biographical notice of Judge Buel attached to Harper's edition of the "Farmer's companion," introduces a truthful eulogy upon the lamented Judge Buel as follows, showing to the youth of our country how much is gained by the union of energy and industry and the application of the mind:

The example of Judge Buel affords practical instruction, as well as his works. There is hardly a situation or condition in life, to which some incident, event or portion, of his existence, does not apply, with particular force and afford much encouragement. To the wealthy, those who, by successful industry, have accumulated competent fortunes, it teaches the salutary lesson, that continued happiness can only be secured by continued industry; that the highly gifted mind must feel a responsibility, for the legitimate exercise of its powers, and that, when the requisite capacity is possessed, the one can be the most effectually secured, and the other satisfied, by communicating, to the minds of the young, the results of a long experience, of much varied observation and accumulated knowledge, and many original and profound reflections upon men and things.

To those who have sustained losses, been unfortunate in business, and had the slow accumulations of years suddenly swept away, by accident, misfortune, or fraud; it teaches the important truth that,

"In the lexicon of youth, which fate reserves
For a bright manhood, there is no such word
As FALL;"

that undaunted resolution, rigid economy, close calculation, prudent management, aided by renewed application, and well-directed persevering industry, can never fail except in cases very uncommon, to retrieve their circumstances, restore their condition, and, by the excellent habits they create, to send them forward, on the mutable course of life with fresh assurance, renewed hope, and more confident anticipations.

To the youth, who has just commenced threading the devious paths of young existence who is beginning to open his senses and his faculties to the appreciation and enjoyment of the aliment with which God has furnished them; it speaks a language, at once impressive and inviting. It presents the instance of one, from among them, born in poverty, having all the hardships, obstacles, and disadvantages, so frequently occurring in early life, to contend with; with no other inheritance than a sound mind in a sound body, working his way, onward and upward, to the esteem, respect, and confidence, of his fellow-men. There have been no peculiarly favorable combinations of circumstances, to contribute to his progress and advancement. No miracle has been wrought in his favor, nor arts of magic enlisted in his aid. Nothing whatever has contributed to remove his case out of the empire of that same cause and effect in subjection to which all the phenomena of life are evolved. It is the obvious case of distinction and a high reputation acquired and earned by the most persevering industry; the most scrupulous regard for right; the exercise of superior intellect; the practice of every virtue; and its plain, practical language to the youth of our land, is — "*Go, and do though likewise.*" You are supported by the same soil; overhung by the same heaven; surrounded by the same classes of objects, and subjected to the action of the same all-pervading laws. Would you possess the same good? Acquire it, by a resort to similar means.

To all, it addresses a consoling language, in the fact, that we here see industry recompensed; unobtrusive merit rewarded, intellectual action accomplishing its objects, high morol worth appreciated; and the unostentatious virtues of alife, held in due esteem and consideration. This tends to create a strong confidence in the benignity of the laws that regulate human affairs; to inspire a higher degree of respect and reverence for the constituent elements of human nature; and to give birth to that sentiment so strongly embodied in the language — "*God, I thank thee, that I am a man!*"

Boston Cultivator.

COW SHEDS.

We take time by the forelock, to advise all our readers, who may not already have done so, to provide *sheds* for their cattle. By having good warm sheds, where they can repose on dry beds, protected alike from rains, shows, sleets, and the piercing chills of north-east winds, we feel satisfied that animals can be subsisted upon 25 per cent less food, and that they will thrive better. So far as milch cows may be concerned, we feel certain that, by thus protecting them, they will give one-third more milk, than if left out in the yard subject to the "pelting of the pitiless storm," as it is but consonant to every principle of physiology, that where an animal may be thus exposed, where every breath it draws carries a chill through its whole system, that the process of secreting milk cannot be advantageously carried on :—it is equally true, that the animal which may be kept in the cold must appropriate a very sensible portion of its food to keep up the necessary degree of heat in the body ; but that if the same animal were protected by a warm stable or shed, that that portion of its food would be converted into nutrition for the benefit and sustenance of its general system, go to keep up its constitutional vigor, and elaborate all its physical functions.

But independent of these considerations, there is another which should, and doubtless will, operate with every agriculturist. Dumb beasts are imbued with feelings, and tho' they cannot make their sufferings known in words, they feel as acutely as do human beings the pinchings of cold, and hence humanity calls upon us to provide for their comfort. We question very much whether any good man could sleep undisturbed, who should be cognizant of the fact that his cattle were without shelter amidst drifting snows and an atmosphere many degrees below freezing point. We do know that thousands and tens of thousands of cattle do suffer thus, but for the honor of our species we are disposed to hope that it arises from a want of reflection, and not from any indifference indulged in towards animal sufferings.— Thus believing, we make this early appeal, in the hope that it may have the desired effect.—*Amer. Farmer.*

To PRESERVE EGGS FRESH.—Turn water upon unslaked lime, in quantity sufficient to cover the lime. In a short time the scum will rise upon the surface. Then drain off the whole water, and add fresh, and repeat the operation until no more scum rises. Stir up the lime and water, and put in your eggs, so that they are completely covered.— This wholly excludes the external air, and preserves them in the finest order. I have now eggs which have been kept in this way eight months, and on being broken cannot be distinguished from those which are fresh laid. A lady who

gave me the recipe, stated that she had preserved them perfectly good in this way for two years. The repeated saturation with water seems necessary to destroy the too great causticity of the lime; otherwise its strong affinity for the carbonate, the material of the egg shell, causes its decomposition. J. B.

INTERESTING AGRICULTURAL FACTS.

Read before the Farmers' Club and communicated to the Farmer and Mechanic for publication.

BY H. MEIGS, ESQ.

The care of enlightened and patriotic men has caused the introduction of precious plants and animals into countries, which had never, since creation, before possessed them.

Lucullus first introduced cherries into Italy, from Pontus, and he first planted them in his princely gardens in Rome, where they have ever since flourished, as greatly as they had ever done in Pontus.

The Malus Pyrus, or rather Epyrus, (the pear) from Epirus. The peach (Malus Punica) from Carthage. The Apricot (Malus Punica) from Carthage. The apricot (Malus Armeniaca) from Armenia. The quince (Malus Cydonia) from Syria—these after having been naturalized to the climate of Italy, were afterwards transplanted by the Romans into all countries conquered by them. The tree from which the first sweet oranges were raised in Portugal, is, perhaps, still living in China, and they bear the name of China oranges, for they were not natives of Portugal.

Rice was first introduced into Carolina about the year 1740.

In England about the year 1500, there were no muskmelons, sallads, cabbages, turneps, carrots, nor any of those garden roots so important now to the people. Long after that the cauliflower was introduced, which now grows so finely in England. About the year 1525 to 1550, hops and pippin apples were first introduced; gooseberries, also currants, roses, July flowers, carnations, asparagus, oranges, beans, lettuce, plums, musk roses, tulips, and artichoke. About the year 1769, the Rhubarb plant was deemed so naturally confined to Tartary, that the Emperor of Russia regulated the quantity brought to market and the price of it, much in the same way that the Dutch have done cloves and mace, and they made England pay annually nearly a million dollars for it, and it now grows in England to great perfection, and as easily as the common dock.

As to birds, the peacock was introduced into England from the East Indies, the pheasant from Asia Minor, and it flourishes in England.

Our barnyard fowls were brought originally to England from Asia. Our horses are from Barbary, Turkey, Persia, Andalusia of Spain, and from Arabia, and they flourish among us. James I. introduced the cattle.

Before the reign of Tiberius it was supposed that the silk worm could exist only in China and Persia. But about the times of Augustus and Tiberious some enterprising man carried the eggs to Greece, where they were found to hatch and thrive perfectly well. They afterwards were carried to Asia Minor, but it was several ages before they were naturalized in Italy by the Francs.

From the Temperance (S. C.) Advocate.

HOW TO PUT UP SWEET POTATOES.

Dear Sir:—Will you oblige me by publishing under your agricultural head, the following statement of the best mode of banking and preserving sweet potatoes for winter use? I have tried various modes for the last seven years, but have never succeeded in preserving my potatoes until the last season, when I adopted the following method:

I made banks of from ten to fifteen bushels each, using nothing but corn-stalks, raising the banks about six inches from the surface of the ground. Before putting the potatoes in, I inserted a stick about four inches in circumference, immediately in the centre of the bank, then deposited the potatoes, heaping them up in a conical form around the stick, and covering them regularly about four inches deep, with corn stalks. When the earth is thrown on, and the banks nearly finished, the stick is drawn out, thus leaving a vacancy through the whole centre of the bank, allowing free ventilation to the potatoes; the orifice on the top of the bank may be closed by placing a little moss in it, and covering with a board. I bank immediately after digging, carting them from the field to the bank, which prevents them from being much bruised.

I had all of my potatoes put up in this way the last season, and have been using them constantly until the month of June last. Out of twelve or fifteen bushels of potatoes in a bank, I never lost more than one half a peck of them from rotting.

The advantage of using corn stalks is, I think, they do not decompose so quickly as pine trash, or straw of any kind, from being covered with earth.

These remarks are offered, with the hope that others may be induced to give us the result of their experiments on this *important* subject to planters generally. The potatoe is a very valuable crop to us, and well worthy of our endeavors to obtain the best mode for its preservation.

Yours respectfully,

Charleston, S. C., 1847. THOMAS B. HERIOT.

THE EXTRAVAGANCE OF ROYALTY—WINDSOR CASTLE—THE GOLD ROOM.—The following "notes" we copy from the account of an eye witness. It is a graphic sketch of the contents of one of the apartments of Windsor Castle. We think, however, a better one of 12,000,000 of dollars might be made, than a mere ostentatious display for the pampering of Royalty. The narrator says:

"From the library we went to the apartment called technically the "Gold Room;" it is this to which I wish to call your attention; I surveyed it leisurely, and I do not remember having read a description of its contents, nor can I give even an outline of its various treasurers; I commenced taking notes from the mouth of the custode, who, with his various assistants, is every day of the year fully employed in cleaning the plate, but he said it was contrary to orders to allow any notes to be taken. What memoranda I did make, and what I remembered accurately, I will state, trusting that my letter will not be opened, and I convicted of treason.

To begin—the whole collection is valued at *twelve millions* of dollars! There are glass cases, like a silversmith's shop, and behind the glass are the principal articles Would you believe that I there saw a dinner service of silver gilt of the most gorgeous kind, presented by the merchants of Liverpool, to the late William the Fourth, long before he was king, in reward for his advocacy of the slave trade! Believe it or not, *there it is*, with the inscription telling the tale.—There is a salver of immense size, made from the gold snuff boxes alone, of George the Fourth—the lids and inscriptions curiously preserved on the surface in a kind of mosaic of gold; its value fifty thousand dollars. Then you may see near it Nell Gwynn's bellows, the handles, nozzles, &c., of gold!—the golden peacock inlaid with diamonds and rubies from Delhi, not as large as a pheasant, but valued at $50,000; the footstool of Tippoo Saib, a solid gold lion with chrystal eyes, the value of its gold seventy-five thousand dollars; George the Fourth's celebrated golden candelabra for a dinner-table, so heavy that two men are required to lift each. Piles upon piles of golden plates, sufficient to dine two hundred and fifty persons, with ample changes, were spread about or in the cleaner's hands.

If this enumeration does not satisfy your aching vision, we will ask the custode, who seems *extremely* anxious, in the midst of so much treasure, and would evidently be glad to get rid of us, to open a long series of dresser-looking drawers. Here are 140 dozen each of gold knives and forks of various patterns, which he repeats the names of; as 'oak,' 'stag,' 'George the Third,' and so on. Another set of dressers! what can they contain? only 141 dozen each of gold table and tea spoons, all arranged in the most perfect order. Take another walk up and down the room; with glass cases on tables in the middle, filled with gorgeous gold, and try to impress some form of taste more elegant than another! It is vain—memory only carries away a confused idea of riches, such as must have cost poor and underground laborers, lives of toil, and sweat, and pain, to procure, merely to pamper wealth and royalty—to do *no good*—to be al-

most as useless as it was in the mine, for it is rarely produced, and requires a host of human beings merely to keep it right.

A little conversation with this king of the gold room, informed us that it was a *poor time* to see the plate, because *fifty chests* were removed to be used by the Queen at Buckingham Palace! He said it was an awful thing to have to get the plate out for a state dinner, *it was so heavy!* and the frequent changes made it a labor to the pages more onerous than the most overtasked worker in iron! Mr. Jesse asked him if the recently inserted iron bars in a certain window had relieved his mind from anxiety respecting robbers? He said it had; 'but you know,' he added, turning to me, 'with so much plate one could hardly sleep, when he knew one of the guards outside might be bribed at any time, the wall mounted by means of ladders, and a great theft be committed.' I could scarcely refrain from saying what I thought—that it would be a great blessing to many of the poor of England and Ireland, if the metal *was* put in circulation.—*Here*, they do not think that its being used as it is, would do any good. Even radical Joseph Hume does not *begrudge*, he says, Windsor and all its contents; the whole nation is proud of it—proud to have it shown to foreign royalty, and to boast that no other nation on the globe can make such an exhibition. Is it or is it not an empty boast?

THORN HEDGES IN PENNSYLVANIA.—Having noticed several articles in the Cultivator in relation to hedges, and thinking friend Nichols in error, I write to say that there are some 400 or 500 rods of hedging in this immediate neighborhood, varying in age from three or four to twenty or thirty years; and when proper attention has been paid to keeping the thorns regular in the row while growing, the fence is now tight and good. In rich soil, the thorn, (*crategus,*) when in fence, grows thriftily and forms a complete barrier to all kinds of stock, without any stone, wood, or briers in the bottom; and instead of requiring three or four feet space, it will grow and prosper if not more than as many inches apart.

There is one fence, along the public road, about seventy rods in length, that is twenty-one years of age, (and surely it ought to have a vote in this matter,) which has answered for a fence during the last twelve or fifteen years of age, and is still a good fence. It did not undergo the natural thinning process that friend Nichols mentions, nor have any of the hedges in this vicinity; but the wonder is that they have not, for the mice have repeatedly eaten the bark off of not a few of them. I believe all the hedges of this vicinity that have arrived at a suitable age have undergone what we call lopping, [*plashing*] we commence at one end of the hedge and chop each stalk about half off, or so that it will bend over and stay there; in this manner each thorn leans on its neighbor, and sprouts that come up from the cut parts soon fasten them firmly in that situation. I this way with proper care and attention, I think a hedge can be made tight and strong enough for friend Nichols or any other person; and, if I mistake not, it will answer to prevent his grand-son's pigs, (not hogs,) from rooting up his newly planted corn. With respect, W. C.

Brownsville, P., 7th month, 17, 1847.—*Ohio Cult.*

QUESTIONS.—A letter from Mr. John Smith, of Burlington, Iowa, inquires:

"I wish to know through your paper the best kind of oil in use for harness—the most proper way to put in wheat, on corn or oat stubble. In growing corn, my plan is to plant in the beginning of May; lay the rows off four feet each way, three grains to a hill; when laying by, harrow. For meadow I use timothy and clover. Experience has shown that both together are better than separate. I also wish to know the proper time to sow onions—some having recommended the fall or first of winter; also the best time to cut timber for rails."

The best oil for harness is neat's foot. The next question we do not clearly understand, but suppose it to be, whether it is best to follow oats or corn with wheat. The latter undoubtedly. Oats and wheat ought not to succeed each other.

If you wish early onions, sow in September, and take up during winter, and plant out during the spring. Or sow in February if there is a mild time.

Of the best time to cut timber, there is a difference of opinion. Our idea is that it may be cut either in mid winter or in mid summer, but should be seasoned as soon as possible. If cut in the summer and left unseasoned, it will rot sooner than if cut in winter; but if due attention is given to seasoning, the summer is as good or even a better time than winter.—*Prairie Farmer.*

VALUABLE EXPERIMENT FOR THE BELIEVERS IN TRANSMUTATION.—*Friend Batchum:* I had a plentiful crop of chess, where my wheat failed this season, and cockle was not scarce. I have been taught to believe that wheat will turn to chess, but I cannot advance any conclusive reason for that belief, and on the contrary I am now inclined to the opposite opinion, and believe that by some means the seeds of chess have got possession of most of our grounds and lie there waiting a suitable opportunity to vegetate. One fact which came under my observation has been the maine cause of this change in my belief. A neighbor of mine, in sowing a field of wheat, accidentally omitted sowing half a land, and did not discover the omission till sometime after, and finally did not sow that half land at all. But the following summer *the missed half land produced a fine crop of chess!* While the other parts of the field were as free from chess as common. Now, how did the chess come there?

Respectfully, &c., JOHN BATTIN.

Ohio Cultivator.

HABITS OF ANIMALS.—You can alter the nature of an animal by changing its food. It will still belong to the family. In this particular, bees are better instructed. When they lose their queen bee—which is an entirely different animal from the working bee—if you present another within twenty-four hours they will not accept her nor obey her. They perfer taking an ordinary grub, before he becomes a flier, and feeding it in a particular way, and when it leaves the grub state, it becomes a queen bee, and they always suffer themselves to be governed by her.

The habits of ants are extremely curious. We all have heard of ant houses, sometimes twenty feet in diameter, filled with halls and rooms of great strength. These and bever dams are constructed upon strictly mechanical principles.

In some insect species, the males have none. This is the case with the glow worm and the females have the property of emitting a phosphorescent light, and were it not for this, the gentleman glow worm would not find his way to his lady's chamber. The ostritch, unlike other birds, is not provided with the means of sitting down. She cannot therefore hatch her eggs, but burries them in hot sand, and leaves nature to hatch them for her. Some birds build no nests, like the cukoo, which deposits her eggs in the nests of other birds—but she knows enough always to select the nests of birds that have bills shaped like her own, for then she is assured her young will have the same kind of food as she will procure.—*Scientific American.*

COLT THE MURDERER.—The Philadelphia correspondent of the Herald writes that there is a report that Colt, who was some years ago sentenced to be executed for murder, but who is generally believed to have escaped by feigned suicide, on the morning specified for the execution, has been seen in the vicinity of that city, within the last month or two. He has relatives living in Blockly township, west of the Schuylkill river, and it was whilst on a visit to them, that he was seen and recognized by one of the neighbors.

THE SLIPPERY ELM.

One of the most valuable as it is well known article in our country, is the slippery elm, Ulmus Fulva. All our apothecaries keep it, both the flower and the bark. It is generally called slippery elm, red elm, or rough leaved elm. It is indigenous to our country, and what is remarkable, yet but little known, it contains a great amount of human nourishment. It is medicinal also. It is an excellent substitute for water, and you can carry in your waistcoat pocket sufficient to subsist upon for ten days. The shipwrecked sailor,

the soldier in Mexico, and the traveller on the prairies should never be without it. It always mitigates hunger, and is nourishment and drink. Let no ship go to sea without it, no traveller fail to have it with him, no army march without it.—*Farmer and Mechanic.*

THE EFFECTS OF ETHER UPON VEGETABLES. — An account is given in the London Athenæum of some curious experiments recently made by M. Clemens, Professor of Natural Sciences in the College of Vevay, Switzerland. These go to prove that vegetables are as susceptible to the effects of ether as animals.

"Take a branch of the common barberry and put it under a drinking glass with a small quantity of ether, for a minute at most if in the sun, and three minutes at most if in the shade, but at a temperature of not less than 59° of Fahrenheit, and when it is withdrawn it will be found, on touching the stamina at their base, that they have lost all their irritability, which will not return in the first instance until after a considerable time, the influence of the ether having been much stronger. In the second case, on the contrary, the primitive irritability is recovered in half an hour. The plant may be etherized a second time, and this second etherization must not be longer than the first, and after half an hour the plant resumes all its vigor. To etherize a sensitive plant (mimosa pudica) the process must be continued for eight or ten minutes, and a proportionably longer time in the shade. The acetic chlorhydric and nitric ethers act in the same manner, but the sulphuric and acetic ethers are the most effective

BLOODY MURRAIN. — HON. H. L. Ellsworth, now of Lafayette, Indiana, informs us that the following recipe has proved a preventive of this disease in several sections where it has prevailed to a great extent: "Take two pints wood ashes and one pint clay, and need them into lumps with salt and water. Lay the lumps where the cattle can lick them whenever they desire to do so."—*Alb. Cult.*

REMEDY FOR APHIDES. — Messrs. Editors: I see in your August number an enquiry for the best way to destroy the insects that so often trouble the tender growth of young apple trees. I can answer from my experience of two years, which I have found not to fail. I go out amongst my trees every morning when there is a heavy dew, so that the trees are quite wet, having with me a quantity of dry fine dust or ashes, or coal dust—dash it into the leaves on the tree, which will cover and stick on them. Attend to them four or five days, and they will disappear, with little or no injury to the trees. Sometimes, if the ground is wet, I rub on the twigs a little soft mud from the ground, which destroys them at once. It does not require anything that is strong, such as tobacco juice, but simply dry dust, when the trees are very wet.—*Prairie Farmer.* P. KIMBALL.

THE DEW. — The theory of the dew is interesting to all admirers of nature, and illustrates in a striking manner the beautiful economy of the operations of her system. Prof. Johnson, in his agricultural chemistry, remarks: The dew is celebrated at all times, and in every tongue: for its sweet influence presents the most beautiful and striking illustration of the agency of the economy of nature, and exhibits one of the wise and bountiful adaptations by which the whole system of things, animate and inanimate, is fitted and bound together. All bodies on the surface of the earth radiate or throw out rays of heat in straight lines, every warmer body to every colder, and the entire surface itself is continually sending rays upward through the clear air into free space. Thus, on the earth's surface all bodies arrive, as it were, after an equal temperature (an equilibrium of heat,) while the surface as a whole tends generally towards a cooler state. But while the sun shines, this cooling will not take place, for the earth then receives in general more heat than it gives off; and if the clear sky be shut out by a canopy of clouds, these will arrest and again prevent it from being dissipated. At night, then, when the sun is absent, the earth will cool the most; and clear nights, also, more than when cloudy; and when clouds only partially obscure the sky, those parts will become the coolest which look towards the clearest portions of the heavens. Now when the surface cools, the air in contact must cool also and like the warm currents on the mountain side, must forsake a portion of the watery vapor it has hitherto retained. This water, like that floating mist on the hills, descends in particles almost infinitely minute. These particles collect upon every leaflet, and suspend themselves from every blade of grass, in 'drops of pearly dew.' And mark here a beautiful adaptation. Different substances are endowed with the property of radiating their own heat, and thus becoming cool with different degrees of rapidity; and these substances, which, in the air become cool at first, also attract first, and most abundantly, the particles of falling dew.

PRESERVING WINTER APPLES.—*Mr. Bateman:* As the time for gathering winter apples is at hand, I will give you my method of saving this fruit, being the result of much successful experience.

I gather the apples carefully by hand, and put them in the barn on some chaff or straw, taking care to avoid bruising them, and let them remain till in danger of freezing, then put them in barrels or boxes in the cellar, carefully taking out all bruised or defective ones. If I want some to keep a long time, I pack them in dry sand or sawdust that has been kiln-dried. Fine shavings, well dried, answer a good purpose. The fruit cellar should be as dry and as cool as possible without freezing. Some kinds of apples require to be handled with extreme care to avoid bruising — such as the belle fleur and rambo. J. T. HIRST.
Ohio Cult.

THE BEE. — The sting of the humble bee is not only severe, but he can sting many times in succession, as he does not lose his sting in the operation. The honey bee, on the contrary, buries his sting deep in the flesh of a person or animal, and as he tears himself away, he leaves the extremity of his body, and tears out a part of his entrails; and though he may return to the hive, he is soon killed by his fellows, as useless, or he soon dies. If a person uses leather gloves, or mittens, in managing bees, when there is danger of their stinging, they lose their lives if they sting in the leather. We once counted fifty stings in a pair of leather gloves, after going among bees that were enraged. So many lives were lost, which induced us afterwards to use very thick, fringed woolen mittens, and when the bees stung these, they could withdraw their stings without injury, as there was not enough firmness in the material to hold the sting, which has beard or barbs, like those of a fish hook, that prevent their easy extraction.—*Boston Cult*

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